Sussex Service Authority

4385 Beef Steak Road
Waverly, Virginia 23890
Phone: (804) 834-8930
Fax: (804) 834-8933

August 7, 2015

Adam Eller
Environmental Specialist II
Virginia DEQ, Piedmont Regional Office
4949-A Cox Road
Glen Allen, Virginia 23060

HAND DELIVERED

Received: RECEIVED PRO
Date: AUG 07 2015

RE: Transmittal of Renewal Application
Sussex Courthouse Complex WWTF
VPDES Permit No. VA0080390

Dear Mr. Eller:

Enclosed please find our VPDES Permit No. VA0062669 renewal application for the Stony Creek Waste Water Treatment Facility. Our renewal application contains the following completed forms:

U.S. EPA Form 1
U.S. EPA Form 2A
VPDES Sewage Sludge Permit Application Form
VPDES Permit Application Addendum
Public Notice Authorization Form

We await your review of this submission and will respond to any requests for additional information prior to the November 7, 2015 deadline. If you have any questions regarding this submission, please contact me at (804)834-6903.

Respectfully submitted,

Michael P. Kearns
Engineer / Deputy Director

CC: Emilee Adamson, Water Permit Manager, Virginia DEQ
Robert Magette, Operations Manager, Sussex Service Authority
Frank H. Irving III, Executive Director, Sussex Service Authority

United States
Environmental Protection
Agency

Office of
Enforcement
Washington, DC 20460

EPA Form 3510-1
Revised August 1990

Permits Division

EPA

Application Form 1 – General Information

Consolidated Permits Program

This form must be completed by all persons applying for a permit under EPA's Consolidated Permits Program. See the general instructions to Form 1 to determine which other application forms you will need.

Please print or type in the unshaded areas only.

Form Approved. OMB No. 2040-0086.

FORM 1 GENERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

S		T/A	C
F			D

1 2 13 14 15

LABEL ITEMS	
I. EPA I.D. NUMBER	PLEASE PLACE LABEL IN THIS SPACE
III. FACILITY NAME	
V. FACILITY MAILING ADDRESS	
VI. FACILITY LOCATION	

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms**.

SPECIFIC QUESTIONS	Mark "X" YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	Mark "X" YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.**? (FORM 2A)	X (16)	(17)	(18)	B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge** to **waters of the U.S.**? (FORM 2B)	(19)	X (20)	(21)
C. Is this a facility which currently results in **discharges** to **waters of the** U.S. other than those described in A or B above? (FORM 2C)	(22)	X (23)	(24)	D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.**? (FORM 2D)	(25)	X (26)	(27)
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)	(28)	X (29)	(30)	F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)	(31)	X (32)	(33)
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)	(34)	X (35)	(36)	H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)	(37)	X (38)	(39)
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)	(40)	X (41)	(42)	J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)	(43)	X (44)	(45)

III. NAME OF FACILITY

c 1 SKIP: STONY CREEK WASTE WATER TREATMENT FACILITY

15 16 – 29 30 69

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*: c 2 KEARNS MICHAEL P. ENGINEER / DEPUTY DIRECTOR (15 16 45)

B. PHONE *(area code & no.)*: (804) 834-8930 (46 48 49 51 52- 55)

V. FACILTY MAILING ADDRESS

A. STREET OR P.O. BOX: c 3 4385 BEEF STEAK ROAD (15 16 45)

B. CITY OR TOWN	C. STATE	D. ZIP CODE
c 4 WAVERLY (15 16 40)	VA (41 42)	23890 (47 51)

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER: c 5 12521 SETZER ROAD (15 16 45)

B. COUNTY NAME: SUSSEX (46 70)

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
c 6 STONY CREEK (15 16 40)	VA (41 42)	23882 (47 51)	(52 -54)

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

VII. SIC CODES *(4-digit, in order of priority)*

A. FIRST	B. SECOND
4952 *(specify)* WASTE WATER TREATMENT FACILITY	*(specify)*

C. THIRD	D. FOURTH
(specify)	*(specify)*

VIII. OPERATOR INFORMATION

A. NAME	B. Is the name listed in Item VIII-A also the owner?
SUSSEX SERVICE AUTHORITY	☑ YES ☐ NO

C. STATUS OF OPERATOR *(Enter the appropriate letter into the answer box: if "Other," specify.)*

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC *(other than federal or state)*
O = OTHER *(specify)*

M *(specify)*

D. PHONE *(area code & no.)*

(804) 834-8930

E. STREET OR P.O. BOX

4385 BEEF STEAK ROAD

F. CITY OR TOWN	G. STATE	H. ZIP CODE	IX. INDIAN LAND
WAVERLY	VA	23890	Is the facility located on Indian lands? ☐ YES ☑ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*	D. PSD *(Air Emissions from Proposed Sources)*
9 N VA0062669	9 P

B. UIC *(Underground Injection of Fluids)*	E. OTHER *(specify)*
9 U	9 *(specify)*

C. RCRA *(Hazardous Wastes)*	E. OTHER *(specify)*
9 R	9 *(specify)*

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS *(provide a brief description)*

OPERATION OF A WASTE WATER TREATMENT FACILITY WHICH WILL TREAT DOMESTIC SEWAGE FROM STONY CREEK AND SURROUNDING COMMERCIAL FACILITIES.THE STONY CREEK WASTE WATER TREATMENT FACILITY WILL DISCHARGE TREATED EFFLUENT INTO STONY CREEK. WATER QUALITY OF TREATED EFFLUENT WILL BE IN ACCORDANCE WITH NPDES PERMITTED LIMITS.

XIII. CERTIFICATION *(see instructions)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE *(type or print)*	B. SIGNATURE	C. DATE SIGNED
FRANK H. IRVING, III EXECUTIVE DIRECTOR	Frank H. Irving, III	08/06/2015

COMMENTS FOR OFFICIAL USE ONLY

C

FACILITY NAME AND PERMIT NUMBER:
Stony Creek WWTF Permit No. VA0062669

Form Approved 1/14/99
OMB Number 2040-0086

FORM 2A NPDES

NPDES FORM 2A APPLICATION OVERVIEW

APPLICATION OVERVIEW

Form 2A has been developed in a modular format and consists of a "Basic Application Information" packet and a "Supplemental Application Information" packet. The Basic Application Information packet is divided into two parts. All applicants must complete Parts A and C. Applicants with a design flow greater than or equal to 0.1 mgd must also complete Part B. Some applicants must also complete the Supplemental Application Information packet. The following items explain which parts of Form 2A you must complete.

BASIC APPLICATION INFORMATION:

A. **Basic Application Information for all Applicants.** All applicants must complete questions A.1 through A.8. A treatment works that discharges effluent to surface waters of the United States must also answer questions A.9 through A.12.

B. **Additional Application Information for Applicants with a Design Flow ≥ 0.1 mgd.** All treatment works that have design flows greater than or equal to 0.1 million gallons per day must complete questions B.1 through B.6.

C. **Certification.** All applicants must complete Part C (Certification).

SUPPLEMENTAL APPLICATION INFORMATION:

D. **Expanded Effluent Testing Data.** A treatment works that discharges effluent to surface waters of the United States and meets one or more of the following criteria must complete Part D (Expanded Effluent Testing Data):

1. Has a design flow rate greater than or equal to 1 mgd,
2. Is required to have a pretreatment program (or has one in place), or
3. Is otherwise required by the permitting authority to provide the information.

E. **Toxicity Testing Data.** A treatment works that meets one or more of the following criteria must complete Part E (Toxicity Testing Data):

1. Has a design flow rate greater than or equal to 1 mgd,
2. Is required to have a pretreatment program (or has one in place), or
3. Is otherwise required by the permitting authority to submit results of toxicity testing.

F. **Industrial User Discharges and RCRA/CERCLA Wastes.** A treatment works that accepts process wastewater from any significant industrial users (SIUs) or receives RCRA or CERCLA wastes must complete Part F (Industrial User Discharges and RCRA/CERCLA Wastes). SIUs are defined as:

1. All industrial users subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations (CFR) 403.6 and 40 CFR Chapter I, Subchapter N (see instructions); and
2. Any other industrial user that:
   a. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions); or
   b. Contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or
   c. Is designated as an SIU by the control authority.

G. **Combined Sewer Systems.** A treatment works that has a combined sewer system must complete Part G (Combined Sewer Systems).

ALL APPLICANTS MUST COMPLETE PART C (CERTIFICATION)

Form Approved 1/14/99
OMB Number 2040-0086

BASIC APPLICATION INFORMATION

PART A. BASIC APPLICATION INFORMATION FOR ALL APPLICANTS:

All treatment works must complete questions A.1 through A.8 of this Basic Application Information packet.

A.1. Facility Information.

Facility name: Stony Creek Waste Water Treatment Facility

Mailing Address: 4385 Beef Steak Road
Waverly, Virginia 23890

Contact person: Michael P. Kearns

Title: Engineer / Deputy Director

Telephone number: (804) 834-8930

Facility Address (not P.O. Box): 12521 Setzer Road
Stony Creek, Virginia 23882

A.2. Applicant Information. If the applicant is different from the above, provide the following:

Applicant name: Sussex Service Authority

Mailing Address: 4385 Beef Steak Road
Waverly, Virginia 23890

Contact person: Frank H. Irving, III

Title: Executive Director

Telephone number: (804) 834-8930

Is the applicant the owner or operator (or both) of the treatment works?

✓ owner ✓ operator

Indicate whether correspondence regarding this permit should be directed to the facility or the applicant.

_____ facility ✓ applicant

A.3. Existing Environmental Permits. Provide the permit number of any existing environmental permits that have been issued to the treatment works (include state-issued permits).

NPDES VA0062669 PSD _____

UIC _____ Other _____

RCRA _____ Other _____

A.4. Collection System Information. Provide information on municipalities and areas served by the facility. Provide the name and population of each entity and, if known, provide information on the type of collection system (combined vs. separate) and its ownership (municipal, private, etc.).

Name	Population Served	Type of Collection System	Ownership
Town of Stony Creek	198	Separate	Municipal

Total population served _____

A.5. Indian Country.

a. Is the treatment works located in Indian Country?

_____ Yes ✓ No

b. Does the treatment works discharge to a receiving water that is either in Indian Country or that is upstream from (and eventually flows through) Indian Country?

_____ Yes ✓ No

A.6. Flow. Indicate the design flow rate of the treatment plant (i.e., the wastewater flow rate that the plant was built to handle). Also provide the average daily flow rate and maximum daily flow rate for each of the last three years. Each year's data must be based on a 12-month time period with the 12th month of "this year" occurring no more than three months prior to this application submittal.

a. Design flow rate 0.040 mgd

	Two Years Ago	Last Year	This Year	
b. Annual average daily flow rate	0.044350	0.038145	0.038249	mgd
c. Maximum daily flow rate	0.099649	0.076714	0.134199	mgd

A.7. Collection System. Indicate the type(s) of collection system(s) used by the treatment plant. Check all that apply. Also estimate the percent contribution (by miles) of each.

✓ Separate sanitary sewer 100 %

_____ Combined storm and sanitary sewer _____ %

A.8. Discharges and Other Disposal Methods.

a. Does the treatment works discharge effluent to waters of the U.S.? ✓ Yes _____ No

If yes, list how many of each of the following types of discharge points the treatment works uses:

i. Discharges of treated effluent 1

ii. Discharges of untreated or partially treated effluent 0

iii. Combined sewer overflow points 0

iv. Constructed emergency overflows (prior to the headworks) 0

v. Other _____ 0

b. Does the treatment works discharge effluent to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the U.S.? _____ Yes ✓ No

If yes, provide the following for each surface impoundment:

Location: _____

Annual average daily volume discharged to surface impoundment(s) _____ mgd

Is discharge _____ continuous or _____ intermittent?

c. Does the treatment works land-apply treated wastewater? _____ Yes ✓ No

If yes, provide the following for each land application site:

Location: _____

Number of acres: _____

Annual average daily volume applied to site: _____ Mgd

Is land application _____ continuous or _____ intermittent?

d. Does the treatment works discharge or transport treated or untreated wastewater to another treatment works? _____ Yes ✓ No

STONY CREEK WWTF FLOW DATA
AUGUST 2014 - JULY 2015

AVERAGE ANNUAL DAILY		MONTH		MAXIMUM DAILY
44,241		August-14		65,710
36,524		September-14		64,640
34,041		October-14		53,005
30,567		November-14		47,295
31,178		December-14		44,331
35,752		January-15		49,186
35,360		February-15		41,209
46,991		March-15		93,658
36,209		April-15		48,956
32,149		May-15		39,544
53,644		June-15		134,199
42,330		July-15		121,937
458,986	TOTAL		TOTAL	803,670
38,249	AVERAGE		AVERAGE	**66,973**

STONY CREEK WWTF FLOW DATA
AUGUST 2013 - JULY 2014

AVERAGE ANNUAL DAILY		MONTH		MAXIMUM DAILY
49,238		August-13		74,132
31,149		September-13		42,644
34,566		October-13		51,438
31,136		November-13		41,032
40,492		December-13		57,931
42,846		January-14		57,166
38,323		February-14		49,842
35,224		March-14		76,714
46,516		April-14		76,108
35,354		May-14		64,748
35,435		June-14		75,400
37,465		July-14		65,148
457,744	TOTAL		TOTAL	732,303
38,145	AVERAGE		AVERAGE	**61,025**

STONY CREEK WWTF FLOW DATA
AUGUST 2012 - JULY 2013

AVERAGE ANNUAL DAILY		MONTH		MAXIMUM DAILY
43,604		August-12		57,734
33,233		September-12		46,319
42,709		October-12		91,029
32,064		November-12		38,574
39,341		December-12		72,450
46,379		January-13		99,649
41,840		February-13		74,767
49,563		March-13		80,870
48,471		April-13		62,363
41,034		May-13		62,946
51,822		June-13		81,146
62,141		July-13		80,264
532,201	TOTAL		TOTAL	848,111
44,350	AVERAGE		AVERAGE	**70,676**

If yes, describe the mean(s) by which the wastewater from the treatment works is discharged or transported to the other treatment works (e.g., tank truck, pipe).

N/A

If transport is by a party other than the applicant, provide:

Transporter name: _____

Mailing Address: _____

_____

Contact person: _____

Title: _____

Telephone number: _____

For each treatment works that receives this discharge, provide the following:

Name: _____

Mailing Address: _____

_____

Contact person: _____

Title: _____

Telephone number: _____

If known, provide the NPDES permit number of the treatment works that receives this discharge. _____

Provide the average daily flow rate from the treatment works into the receiving facility. _____ mgd

e. Does the treatment works discharge or dispose of its wastewater in a manner not included in A.8.a through A.8.d above (e.g., underground percolation, well injection)? _____ Yes ✓ No

If yes, provide the following for each disposal method:

Description of method (including location and size of site(s) if applicable):

_____

Annual daily volume disposed of by this method: _____

Is disposal through this method _____ continuous or _____ intermittent?

WASTEWATER DISCHARGES:

If you answered "yes" to question A.8.a, complete questions A.9 through A.12 **once for each outfall** (including bypass points) through which effluent is discharged. Do not include information on combined sewer overflows in this section. **If you answered "no" to question A.8.a**, go to Part B, "Additional Application Information for Applicants with a Design Flow Greater than or Equal to 0.1 mgd."

A.9. Description of Outfall.

a. Outfall number: 001

b. Location:
Town of Stony Creek (City or town, if applicable) — 23882 (Zip Code)
Sussex (County) — Virginia (State)
37 56' 57"N (Latitude) — 77 23' 30"W (Longitude)

c. Distance from shore (if applicable): Not Applicable ft.

d. Depth below surface (if applicable): NotApplicable ft.

e. Average daily flow rate: 0.038249 mgd

f. Does this outfall have either an intermittent or a periodic discharge? ____ Yes ✓ No (go to A.9.g.)

If yes, provide the following information:

Number of times per year discharge occurs: ____

Average duration of each discharge: ____

Average flow per discharge: ____ mgd

Months in which discharge occurs: ____

g. Is outfall equipped with a diffuser? ____ Yes ✓ No

A.10. Description of Receiving Waters.

a. Name of receiving water: Stony Creek

b. Name of watershed (if known): Chowan and Dismal Swamp

United States Soil Conservation Service 14-digit watershed code (if known): ____

c. Name of State Management/River Basin (if known): Chowan River and Dismal Swamp

United States Geological Survey 8-digit hydrologic cataloging unit code (if known): ____

d. Critical low flow of receiving stream (if applicable):
acute N/A cfs chronic N/A cfs

e. Total hardness of receiving stream at critical low flow (if applicable): N/A mg/l of $CaCO_3$

A.11. Description of Treatment.

a. What levels of treatment are provided? Check all that apply.

✓ Primary ✓ Secondary

____ Advanced ____ Other. Describe: _____

b. Indicate the following removal rates (as applicable):

Design BOD_5 removal or Design $CBOD_5$ removal	85% %
Design SS removal	85% %
Design P removal	N/A %
Design N removal	N/A %
Other _____	N/A %

c. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe.

Chlorine Tabs

If disinfection is by chlorination, is dechlorination used for this outfall? ✓ Yes ____ No

d. Does the treatment plant have post aeration? ____ Yes ✓ No

A.12. Effluent Testing Information. All Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three samples and must be no more than four and one-half years apart.

Outfall number: 001

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	7.76	s.u.			
pH (Maximum)	8.27	s.u.			
Flow Rate	0.0377	MGD	0.0330	MGD	11
Temperature (Winter)	14.3	degrees C	8.8	degrees C	5
Temperature (Summer)	28.3	degrees C	24.9	degrees C	6

* For pH please report a minimum and a maximum daily value

POLLUTANT		MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
		Conc.	Units	Conc.	Units	Number of Samples		
CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.								
BIOCHEMICAL OXYGEN	BOD-5	36	mg/l	17.82	mg/l	11	5210B	2.0
DEMAND (Report one)	CBOD-5		mg/l		mg/l		5201B	
FECAL COLIFORM		13.0	MPN100ml	2.73	MPN100m	11	9221C&E	2.0
TOTAL SUSPENDED SOLIDS (TSS)		36	mg/l	17.15	mg/l	11	2540D	1.0

END OF PART A.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

Stony Creek FORM 2A Data

Date	pH mg/l	Flow MGD	Temp Deg Celsius Winter	Temp Deg Celsius Summer	E Coli #/100ML	BOD mg/l	CBOD - 5 mg/l	TSS mg/l	Ammonia mg/l	Cl2 mg/l	D.O. mg/l	TKN mg/l	NO3/NO2 mg/l	O & G mg/l	Phos mg/l	TDS mg/l
1/21/2014	7.87	0.0299	6.5		1.00	17.00		13.00			11.39					
3/13/2014	7.89	0.0295	11.6		1.00	10.00		16.00			8.8					
5/20/2014	7.94	0.0326		22.1	1.00	22.00		36.00			7.46					
7/17/2014	8.00	0.0373		26.5	1.00	11.00		8.30			6.57					
9/19/2014	7.79	0.0306		22.5	8.00	12.00		7.40			8.84					
12/9/2014	7.94	0.0266	8.4		13.00	9.00		10			10.11					
2/7/2015	8.27	0.0350	3.2		1.00	26.00		17			11.32					
3/17/2015	7.98	0.0377	14.3		1.00	21.00		12.00			8.54					
5/8/2015	8.14	0.0351		22.8	1.00	36.00		21.00			8.02					
6/18/2015	7.91	0.0322		28.3	1.00	20.00		15.00			7.16					
7/14/2015	7.76	0.0368		27.3	1.00	12.00		33.00			7.01					
G or C	**G**				**G**	**C**	**C**	**C**	**C**	**G**	**G**	**C**	**C**	**G**	**C**	**C**
Minimum	7.76	0.0266	3.2	22.1	1.00	9.00	0.00	7.40		0.00	6.57		0.00		0.00	0
Maximum	8.27	0.0377	14.3	28.3	13.00	36.00	0.00	36.00		0.00	11.39		0.00		0.00	0
Average	7.95	0.0330	8.8	24.9	2.73	17.82	#DIV/0!	17.15		0.00	9		#DIV/0!		#DIV/0!	#DIV/0!
# Samples	**11**	**11**	**5**	**6**	**11**	**11**		**11**		**0**	**11**		**0**		**0**	**0**

Note: "0" results represent analysis that was below detection limits

BASIC APPLICATION INFORMATION

PART B. ADDITIONAL APPLICATION INFORMATION FOR APPLICANTS WITH A DESIGN FLOW GREATER THAN OR EQUAL TO 0.1 MGD (100,000 gallons per day).

All applicants with a design flow rate ≥ 0.1 mgd must answer questions B.1 through B.6. All others go to Part C (Certification).

B.1. Inflow and Infiltration. Estimate the average number of gallons per day that flow into the treatment works from inflow and/or infiltration.

N/A gpd

Briefly explain any steps underway or planned to minimize inflow and infiltration.

B.2. Topographic Map. Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. (You may submit more than one map if one map does not show the entire area.)

a. The area surrounding the treatment plant, including all unit processes.

b. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.

c. Each well where wastewater from the treatment plant is injected underground.

d. Wells, springs, other surface water bodies, and drinking water wells that are: 1) within 1/4 mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.

e. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.

f. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored, and/or disposed.

B.3. Process Flow Diagram or Schematic. Provide a diagram showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. Also provide a water balance showing all treatment units, including disinfection (e.g, chlorination and dechlorination). The water balance must show daily average flow rates at influent and discharge points and approximate daily flow rates between treatment units. Include a brief narrative description of the diagram.

B.4. Operation/Maintenance Performed by Contractor(s).

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor? ____Yes ✓No

If yes, list the name, address, telephone number, and status of each contractor and describe the contractor's responsibilities (attach additional pages if necessary).

Name:

Mailing Address:

Telephone Number:

Responsibilities of Contractor:

B.5. Scheduled Improvements and Schedules of Implementation. Provide information on any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses to question B.5 for each. (If none, go to question B.6.)

a. List the outfall number (assigned in question A.9) for each outfall that is covered by this implementation schedule.

"NOT APPLICABLE"

b. Indicate whether the planned improvements or implementation schedule are required by local, State, or Federal agencies.

____Yes ✓No

c If the answer to B.5.b is "Yes," briefly describe, including new maximum daily inflow rate (if applicable).

_____

d. Provide dates imposed by any compliance schedule or any actual dates of completion for the implementation steps listed below, as applicable. For improvements planned independently of local, State, or Federal agencies, indicate planned or actual completion dates, as applicable. Indicate dates as accurately as possible.

Implementation Stage	Schedule MM / DD / YYYY	Actual Completion MM / DD / YYYY
– Begin construction	___/___/_____	___/___/_____
– End construction	___/___/_____	___/___/_____
– Begin discharge	___/___/_____	___/___/_____
– Attain operational level	___/___/_____	___/___/_____

e. Have appropriate permits/clearances concerning other Federal/State requirements been obtained? ____Yes ____No

Describe briefly: _____

_____

B.6. EFFLUENT TESTING DATA (GREATER THAN O.1 MGD ONLY).

Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall Number: 001

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
	Conc.	Units	Conc.	Units	Number of Samples		
CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.							
AMMONIA (as N)		mg/L		mg/L		4500 NH3D	0.20
CHLORINE (TOTAL RESIDUAL, TRC)		mg/L		mg/L		4500-C1G	0.10
DISSOLVED OXYGEN		mg/L		mg/L		4500-O G	0.05
TOTAL KJELDAHL NITROGEN (TKN)		mg/L		mg/L		351.2	0.50
NITRATE PLUS NITRITE NITROGEN		mg/L		mg/L		353.2 4500NO2B	0.05
OIL and GREASE		mg/L		mg/L		1664 A	5.0
PHOSPHORUS (Total)		mg/L		mg/L		365.1	0.10
TOTAL DISSOLVED SOLIDS (TDS)		mg/L		mg/L		2540 C	10.0
OTHER							

END OF PART B.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

FACILITY NAME AND PERMIT NUMBER:
Stony Creek WWTF Permit No. VA0062669

Form Approved 1/14/99
OMB Number 2040-0086

BASIC APPLICATION INFORMATION

PART C. CERTIFICATION

All applicants must complete the Certification Section. Refer to instructions to determine who is an officer for the purposes of this certification. All applicants must complete all applicable sections of Form 2A, as explained in the Application Overview. Indicate below which parts of Form 2A you have completed and are submitting. By signing this certification statement, applicants confirm that they have reviewed Form 2A and have completed all sections that apply to the facility for which this application is submitted.

Indicate which parts of Form 2A you have completed and are submitting:

✓ Basic Application Information packet

Supplemental Application Information packet:

_____ Part D (Expanded Effluent Testing Data)

✓ Part E (Toxicity Testing: Biomonitoring Data)

✓ Part F (Industrial User Discharges and RCRA/CERCLA Wastes)

_____ Part G (Combined Sewer Systems)

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title: Frank H. Irving, III Executive Director

Signature: Frank H. Irving, III

Telephone number: (804) 834-8930

Date signed: 08/06/2015

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

SEND COMPLETED FORMS TO:

SUPPLEMENTAL APPLICATION INFORMATION

PART D. EXPANDED EFFLUENT TESTING DATA

Refer to the directions on the cover page to determine whether this section applies to the treatment works.

Effluent Testing: 1.0 mgd and Pretreatment Treatment Works. If the treatment works has a design flow greater than or equal to 1.0 mgd or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information and any other information required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analyses conducted using 40 CFR Part 136 methods. In addition, these data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Indicate in the blank rows provided below any data you may have on pollutants not specifically listed in this form. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall number: N/A (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS, AND HARDNESS.											
ANTIMONY											
ARSENIC											
BERYLLIUM											
CADMIUM											
CHROMIUM											
COPPER											
LEAD											
MERCURY											
NICKEL											
SELENIUM											
SILVER											
THALLIUM											
ZINC											
CYANIDE											
TOTAL PHENOLIC COMPOUNDS											
HARDNESS (AS $CaCO_3$)											
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer.											

FACILITY NAME AND PERMIT NUMBER:
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Outfall number: _____ (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
VOLATILE ORGANIC COMPOUNDS.											
ACROLEIN											
ACRYLONITRILE											
BENZENE											
BROMOFORM											
CARBON TETRACHLORIDE											
CLOROBENZENE											
CHLORODIBROMO-METHANE											
CHLOROETHANE											
2-CHLORO-ETHYLVINYL ETHER											
CHLOROFORM											
DICHLOROBROMO-METHANE											
1,1-DICHLOROETHANE											
1,2-DICHLOROETHANE											
TRANS-1,2-DICHLORO-ETHYLENE											
1,1-DICHLOROETHYLENE											
1,2-DICHLOROPROPANE											
1,3-DICHLORO-PROPYLENE											
ETHYLBENZENE											
METHYL BROMIDE											
METHYL CHLORIDE											
METHYLENE CHLORIDE											
1,1,2,2-TETRACHLORO-ETHANE											
TETRACHLORO-ETHYLENE											
TOLUENE											

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Outfall number: _____ (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
1,1,1-TRICHLOROETHANE											
1,1,2-TRICHLOROETHANE											
TRICHLORETHYLENE											
VINYL CHLORIDE											
Use this space (or a separate sheet) to provide information on other volatile organic compounds requested by the permit writer.											
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL											
2-CHLOROPHENOL											
2,4-DICHLOROPHENOL											
2,4-DIMETHYLPHENOL											
4,6-DINITRO-O-CRESOL											
2,4-DINITROPHENOL											
2-NITROPHENOL											
4-NITROPHENOL											
PENTACHLOROPHENOL											
PHENOL											
2,4,6-TRICHLOROPHENOL											
Use this space (or a separate sheet) to provide information on other acid-extractable compounds requested by the permit writer.											
BASE-NEUTRAL COMPOUNDS.											
ACENAPHTHENE											
ACENAPHTHYLENE											
ANTHRACENE											
BENZIDINE											
BENZO(A)ANTHRACENE											
BENZO(A)PYRENE											

FACILITY NAME AND PERMIT NUMBER:
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Form Approved 1/14/99
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Outfall number: _____ (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
3,4 BENZO-FLUORANTHENE											
BENZO(GHI)PERYLENE											
BENZO(K)FLUORANTHENE											
BIS (2-CHLOROETHOXY) METHANE											
BIS (2-CHLOROETHYL)-ETHER											
BIS (2-CHLOROISO-PROPYL) ETHER											
BIS (2-ETHYLHEXYL) PHTHALATE											
4-BROMOPHENYL PHENYL ETHER											
BUTYL BENZYL PHTHALATE											
2-CHLORONAPHTHALENE											
4-CHLORPHENYL PHENYL ETHER											
CHRYSENE											
DI-N-BUTYL PHTHALATE											
DI-N-OCTYL PHTHALATE											
DIBENZO(A,H) ANTHRACENE											
1,2-DICHLOROBENZENE											
1,3-DICHLOROBENZENE											
1,4-DICHLOROBENZENE											
3,3-DICHLOROBENZIDINE											
DIETHYL PHTHALATE											
DIMETHYL PHTHALATE											
2,4-DINITROTOLUENE											
2,6-DINITROTOLUENE											
1,2-DIPHENYLHYDRAZINE											

FACILITY NAME AND PERMIT NUMBER:
Stony Creek WWTF Permit No. VA0062669

Form Approved 1/14/99
OMB Number 2040-0086

Outfall number: _____ (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
FLUORANTHENE											
FLUORENE											
HEXACHLOROBENZENE											
HEXACHLOROBUTADIENE											
HEXACHLOROCYCLO-PENTADIENE											
HEXACHLOROETHANE											
INDENO(1,2,3-CD)PYRENE											
ISOPHORONE											
NAPHTHALENE											
NITROBENZENE											
N-NITROSODI-N-PROPYLAMINE											
N-NITROSODI- METHYLAMINE											
N-NITROSODI-PHENYLAMINE											
PHENANTHRENE											
PYRENE											
1,2,4-TRICHLOROBENZENE											
Use this space (or a separate sheet) to provide information on other base-neutral compounds requested by the permit writer.											
Use this space (or a separate sheet) to provide information on other pollutants (e.g., pesticides) requested by the permit writer.											

END OF PART D.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

SUPPLEMENTAL APPLICATION INFORMATION

PART E. TOXICITY TESTING DATA

POTWs meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points: 1) POTWs with a design flow rate greater than or equal to 1.0 mgd; 2) POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403); or 3) POTWs required by the permitting authority to submit data for these parameters.

- At a minimum, these results must include quarterly testing for a 12-month period within the past 1 year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute and/or chronic toxicity, depending on the range of receiving water dilution. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- In addition, submit the results of any other whole effluent toxicity tests from the past four and one-half years. If a whole effluent toxicity test conducted during the past four and one-half years revealed toxicity, provide any information on the cause of the toxicity or any results of a toxicity reduction evaluation, if one was conducted.
- If you have already submitted any of the information requested in Part E, you need not submit it again. Rather, provide the information requested in question E.4 for previously submitted information. If EPA methods were not used, report the reasons for using alternate methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E.

If no biomonitoring data is required, do not complete Part E. Refer to the Application Overview for directions on which other sections of the form to complete.

E.1. Required Tests.

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years.

____chronic ✓ acute

E.2. Individual Test Data. Complete the following chart for each whole effluent toxicity test conducted in the last four and one-half years. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.

	Test number:_____	Test number:_____	Test number:_____
a. Test information.			
Test species & test method number	SEE ATTACHED CUMULA -	-TIVE DATA SUMMARY	
Age at initiation of test			
Outfall number			
Dates sample collected			
Date test started			
Duration			
b. Give toxicity test methods followed.			
Manual title			
Edition number and year of publication			
Page number(s)			
c. Give the sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used.			
24-Hour composite			
Grab			
d. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each)			
Before disinfection			
After disinfection			
After dechlorination			

	Test number:_____	Test number:_____	Test number:_____
e. Describe the point in the treatment process at which the sample was collected.			
Sample was collected:			
f. For each test, include whether the test was intended to assess chronic toxicity, acute toxicity, or both.			
Chronic toxicity			
Acute toxicity			
g. Provide the type of test performed.			
Static			
Static-renewal			
Flow-through			
h. Source of dilution water. If laboratory water, specify type; if receiving water, specify source.			
Laboratory water			
Receiving water			
i. Type of dilution water. It salt water, specify "natural" or type of artificial sea salts or brine used.			
Fresh water			
Salt water			
j. Give the percentage effluent used for all concentrations in the test series.			
k. Parameters measured during the test. (State whether parameter meets test method specifications)			
pH			
Salinity			
Temperature			
Ammonia			
Dissolved oxygen			
l. Test Results.			
Acute:			
Percent survival in 100% effluent	%	%	%
LC_{50}			
95% C.I.	%	%	%
Control percent survival	%	%	%
Other (describe)			

Chronic:			
NOEC	%	%	%
IC_{25}	%	%	%
Control percent survival	%	%	%
Other (describe)			

m. Quality Control/Quality Assurance.

Is reference toxicant data available?			
Was reference toxicant test within acceptable bounds?			
What date was reference toxicant test run (MM/DD/YYYY)?			
Other (describe)			

E.3. Toxicity Reduction Evaluation. Is the treatment works involved in a Toxicity Reduction Evaluation?

____Yes ✓ No If yes, describe: _____

_____

_____

E.4. Summary of Submitted Biomonitoring Test Information. If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Date submitted: _____ (MM/DD/YYYY)

Summary of results: (see instructions)

_____

_____

END OF PART E.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.

SUPPLEMENTAL APPLICATION INFORMATION

PART F. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete Part F.

GENERAL INFORMATION:

F.1. Pretreatment Program. Does the treatment works have, or is it subject to, an approved pretreatment program?

____Yes ✓ No

F.2. Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs). Provide the number of each of the following types of industrial users that discharge to the treatment works.

a. Number of non-categorical SIUs. 0

b. Number of CIUs. 0

SIGNIFICANT INDUSTRIAL USER INFORMATION:

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, copy questions F.3 through F.8 and provide the information requested for each SIU.

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: NONE

Mailing Address: _____

_____

F.4. Industrial Processes. Describe all of the industrial processes that affect or contribute to the SIU's discharge.

_____

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): _____

Raw material(s): _____

F.6. Flow Rate.

a. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (_____continuous or _____intermittent)

b. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (_____continuous or _____intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local limits ____Yes ____No

b. Categorical pretreatment standards ____Yes ____No

If subject to categorical pretreatment standards, which category and subcategory?

_____

F.8. Problems at the Treatment Works Attributed to Waste Discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

____Yes____No If yes, describe each episode.

Not applicable

RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE:

F.9. RCRA Waste. Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail, or dedicated pipe? ____Yes ✓ No (go to F.12.)

F.10. Waste Transport. Method by which RCRA waste is received (check all that apply):

_____Truck _____Rail _____Dedicated Pipe

F.11. Waste Description. Give EPA hazardous waste number and amount (volume or mass, specify units).

EPA Hazardous Waste Number	Amount	Units

CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER:

F.12. Remediation Waste. Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?

____Yes (complete F.13 through F.15.) ✓ No

Provide a list of sites and the requested information (F.13 - F.15.) for each current and future site.

F.13. Waste Origin. Describe the site and type of facility at which the CERCLA/RCRA/or other remedial waste originates (or is expected to originate in the next five years).

F.14. Pollutants. List the hazardous constituents that are received (or are expected to be received). Include data on volume and concentration, if known. (Attach additional sheets if necessary).

F.15. Waste Treatment.

a. Is this waste treated (or will it be treated) prior to entering the treatment works?

____Yes ____No

If yes, describe the treatment (provide information about the removal efficiency):

b. Is the discharge (or will the discharge be) continuous or intermittent?

____Continuous ____Intermittent If intermittent, describe discharge schedule.

END OF PART F.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

SUPPLEMENTAL APPLICATION INFORMATION

PART G. COMBINED SEWER SYSTEMS

If the treatment works has a combined sewer system, complete Part G.

G.1. System Map. Provide a map indicating the following: (may be included with Basic Application Information)

a. All CSO discharge points.

b. Sensitive use areas potentially affected by CSOs (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems, and outstanding natural resource waters).

c. Waters that support threatened and endangered species potentially affected by CSOs.

G.2. System Diagram. Provide a diagram, either in the map provided in G.1. or on a separate drawing, of the combined sewer collection system that includes the following information:

a. Locations of major sewer trunk lines, both combined and separate sanitary.

b. Locations of points where separate sanitary sewers feed into the combined sewer system.

c. Locations of in-line and off-line storage structures.

d. Locations of flow-regulating devices.

e. Locations of pump stations.

CSO OUTFALLS:

Complete questions G.3 through G.6 once for each CSO discharge point.

G.3. Description of Outfall.

a. Outfall number _____

b. Location _____
(City or town, if applicable) (Zip Code)

_____
(County) (State)

_____
(Latitude) (Longitude)

c. Distance from shore (if applicable) _____ft.

d. Depth below surface (if applicable) _____ft.

e. Which of the following were monitored during the last year for this CSO?

____Rainfall ____CSO pollutant concentrations ____CSO frequency

____CSO flow volume ____Receiving water quality

f. How many storm events were monitored during the last year? _____

G.4. CSO Events.

a. Give the number of CSO events in the last year.

_____ events (___ actual or ___ approx.)

b. Give the average duration per CSO event.

_____ hours (____ actual or ____ approx.)

c. Give the average volume per CSO event.

_____ million gallons (_____ actual or _____ approx.)

d. Give the minimum rainfall that caused a CSO event in the last year.

_____ inches of rainfall

G.5. Description of Receiving Waters.

a. Name of receiving water: _____

b. Name of watershed/river/stream system: _____

United States Soil Conservation Service 14-digit watershed code (if known): _____

c. Name of State Management/River Basin: _____

United States Geological Survey 8-digit hydrologic cataloging unit code (if known): _____

G.6. CSO Operations.

Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shell fish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable State water quality standard).

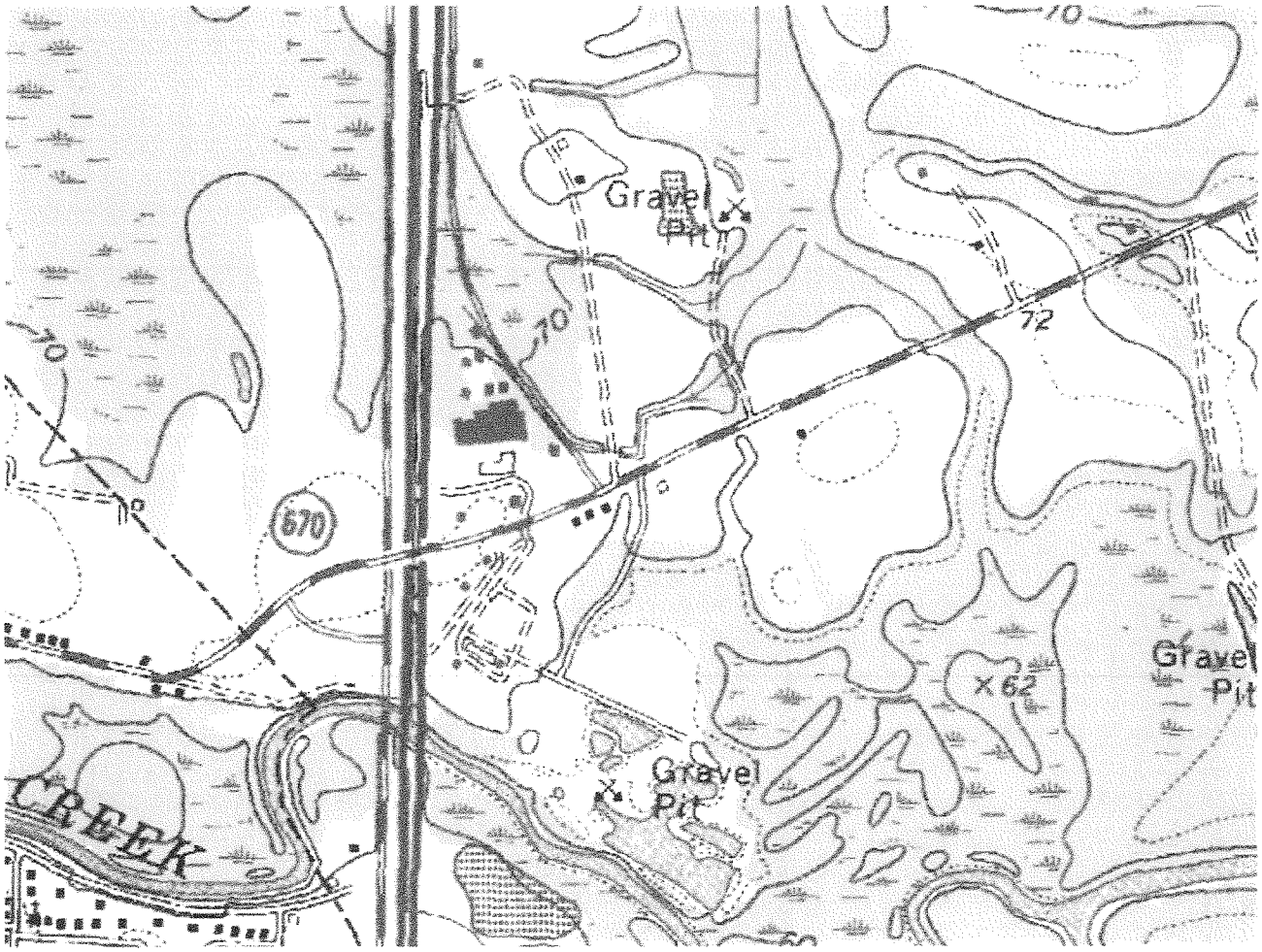
_____

_____

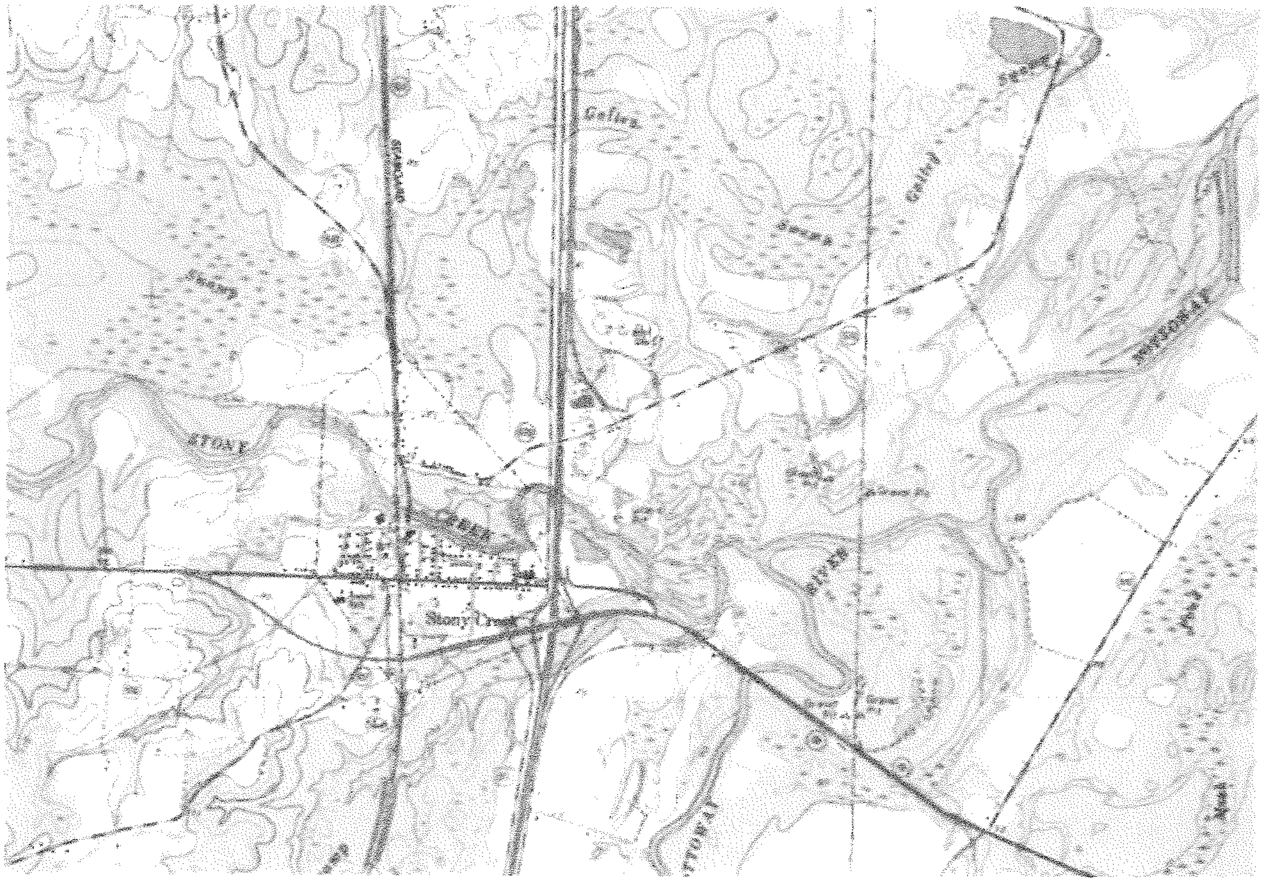
END OF PART G.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.

Additional information, if provided, will appear on the following pages.

The white line is showing ½ mile distance.
The three small blue x's are showing the property where a well is located.


Gravel Pit
670
CREEK
Gravel Pit
Gravel Pit
X 62


Gravel Pit
670
Gravel Pit
Creek


STONY
CREEK
Stony Creek
RIVER

FACILITY NAME: Stony Creek WWTF VPDES PERMIT NUMBER: VA0062669

VPDES SEWAGE SLUDGE PERMIT APPLICATION FORM

SCREENING INFORMATION

This application is divided into four sections. Section A pertains to all applicants. The applicability of Sections B, C and D depends on your facility's sewage sludge use or disposal practices. The information provided on this page will help you determine which sections to fill out.

1. All applicants must complete Section A (General Information).

2. Does this facility generate sewage sludge? X Yes _____ No

   Does this facility derive a material from sewage sludge? _____ Yes X No

   If you answered "Yes" to either, complete Section B (Generation Of Sewage Sludge or Preparation Of A Material Derived From Sewage Sludge).

3. Does this facility apply sewage sludge to the land? _____ Yes X No

   Is sewage sludge from this facility applied to the land? _____ Yes X No

   If you answer "No" to all above, skip Section C.

   If you answered "Yes" to either, answer the following three questions:

   a. Does the sewage sludge from this facility meet the ceiling concentrations, pollutant concentrations, Class A pathogen reduction requirements and one of the vector attraction reduction requirements 1-8, as identified in the instructions? _____ Yes _____ No

   b. Is sewage sludge from this facility placed in a bag or other container for sale or give-away for application to the land? _____ Yes _____ No

   c. Is sewage sludge from this facility sent to another facility for treatment or blending? _____ Yes _____ No

   If you answered "No" to all three, complete Section C (Land Application Of Bulk Sewage Sludge).

   If you answered "Yes" to a, b or c, skip Section C.

4. Do you own or operate a surface disposal site? _____ Yes X No

   If "Yes", complete Section D (Surface Disposal).

FACILITY NAME: Stony Creek WWTF VPDES PERMIT NUMBER: VA0062669

SECTION A. GENERAL INFORMATION

All applicants must complete this section.

1. **Facility Information.**
   a. Facility name: Stony Creek Waste Water Treatment Facility
   b. Contact person: Michael P. Kearns
      Title: Engineer / Deputy Director
      Phone: (804) 834-8930
   c. Mailing address:
      Street or P.O. Box: 4385 Beef Steak Road
      City or Town: Waverly State: Virginia Zip: 23890
   d. Facility location:
      Street or Route #: 12521 Setzer Road
      County: Sussex
      City or Town: Stony Creek State: Virginia Zip: 23882
   e. Is this facility a Class I sludge management facility? ____ Yes x No
   f. Facility design flow rate: 0.040 mgd
   g. Total population served: 198
   h. Indicate the type of facility:
      x Publicly owned treatment works (POTW)
      ____ Privately owned treatment works
      ____ Federally owned treatment works
      ____ Blending or treatment operation
      ____ Surface disposal site
      ____ Other (describe):

2. **Applicant Information.** If the applicant is different from the above, provide the following:
   a. Applicant name: Sussex Service Authority
   b. Mailing address:
      Street or P.O. Box: 4385 Beef Steak Road
      City or Town: Waverly State: Virginia Zip: 23890
   c. Contact person: Michael P. Kearns
      Title: Deputy Director
      Phone: (804) 834-8930
   d. Is the applicant the owner or operator (or both) of this facility?
      x owner x operator
   e. Should correspondence regarding this permit be directed to the facility or the applicant?
      ____ facility x applicant

3. **Permit Information.**
   a. Facility's VPDES permit number (if applicable): VA0062669
   b. List on this form or an attachment, all other federal, state or local permits or construction approvals received or applied for that regulate this facility's sewage sludge management practices:

Permit Number:	Type of Permit:

4. **Indian Country.** Does any generation, treatment, storage, application to land or disposal of sewage sludge from this facility occur in Indian Country? _____ Yes X No If "Yes", describe:

_____

5. **Topographic Map.** Provide a topographic map or maps (or other appropriate maps if a topographic map is unavailable) that shows the following information. Maps should include the area one mile beyond all property boundaries of the facility:
   a. Location of all sewage sludge management facilities, including locations where sewage sludge is generated, stored, treated, or disposed.
   b. Location of all wells, springs, and other surface water bodies listed in public records or otherwise known to the applicant within 1/4 mile of the property boundaries.

6. **Line Drawing.** Provide a line drawing and/or a narrative description that identifies all sewage sludge processes that will be employed during the term of the permit including all processes used for collecting, dewatering, storing, or treating sewage sludge, the destination(s) of all liquids and solids leaving each unit, and all methods used for pathogen reduction and vector attraction reduction.

7. **Contractor Information.** Are any operational or maintenance aspects of this facility related to sewage sludge generation, treatment, use or disposal the responsibility of a contractor? _____ Yes X No

   If "Yes", provide the following for each contractor (attach additional pages if necessary).

   Name: _____

   Mailing address:

   Street or P.O. Box: _____

   City or Town: _____ State: _____ Zip: _____

   Phone: (_____) _____

   Contractor's Federal, State or Local Permit Number(s) applicable to this facility's sewage sludge:

   _____

   If the contractor is responsible for the use and/or disposal of the sewage sludge, provide a description of the service to be provided to the applicant and the respective obligations of the applicant and the contractor(s).

8. **Pollutant Concentrations.** Using the table below or a separate attachment, provide sewage sludge monitoring data for the pollutants which limits in sewage sludge have been established in 9 VAC 25-31-10 et seq. for this facility's expected use or disposal practices. All data must be based on three or more samples taken at least one month apart and must be no more than four and one-half years old.

POLLUTANT	CONCENTRATION (mg/kg dry weight)	SAMPLE DATE	ANALYTICAL METHOD	DETECTION LEVEL FOR ANALYSIS
Arsenic				
Cadmium				
Chromium				
Copper				
Lead				
Mercury				
Molybdenum				
Nickel				
Selenium				
Zinc				

FACILITY NAME: Stony Creek WWTF VPDES PERMIT NUMBER: VA0062669

9. **Certification.** Read and submit the following certification statement with this application. Refer to the instructions to determine who is an officer for purposes of this certification. Indicate which parts of the application you have completed and are submitting:

X Section A (General Information)

X Section B (Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge)

____ Section C (Land Application of Bulk Sewage Sludge)

____ Section D (Surface Disposal)

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name and official title Frank H. Irving III

Signature Frank H. Irving, III Date Signed August 6, 2015

Telephone number (804) 834-8930

Upon request of the department, you must submit any other information necessary to assess sewage sludge use or disposal practices at your facility or identify appropriate permitting requirements.

FACILITY NAME: Stony Creek WWTF VPDES PERMIT NUMBER: VA0062669

SECTION B. GENERATION OF SEWAGE SLUDGE OR PREPARATION OF A MATERIAL DERIVED FROM SEWAGE SLUDGE

Complete this section if your facility generates sewage sludge or derives a material from sewage sludge

1. **Amount Generated On Site.**
   Total dry metric tons per 365-day period generated at your facility: _____ dry metric tons

2. **Amount Received from Off Site.** If your facility receives sewage sludge from another facility for treatment, use or disposal, provide the following information for each facility from which sewage sludge is received. If you receive sewage sludge from more than one facility, attach additional pages as necessary.
   a. Facility name: NOT APPLICABLE
   b. Contact Person: _____
      Title: _____
      Phone: (_____) _____
   c. Mailing address:
      Street or P.O. Box: _____
      City or Town: _____ State: _____ Zip: _____
   d. Facility location: _____
      (not P.O. Box) _____
   e. Total dry metric tons per 365-day period received from this facility: _____ dry metric tons
   f. Describe, on this form or on another sheet of paper, any treatment processes known to occur at the off-site facility, including blending activities and treatment to reduce pathogens or vector attraction characteristics:

      _____

      _____

3. **Treatment Provided at Your Facility.**
   a. Which class of pathogen reduction is achieved for the sewage sludge at your facility?
      _____ Class A _____ Class B X Neither or unknown
   b. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce pathogens in sewage sludge: NOT APPLICABLE

      _____
   c. Which vector attraction reduction option is met for the sewage sludge at your facility?
      _____ Option 1 (Minimum 38 percent reduction in volatile solids)
      _____ Option 2 (Anaerobic process, with bench-scale demonstration)
      _____ Option 3 (Aerobic process, with bench-scale demonstration)
      _____ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
      _____ Option 5 (Aerobic processes plus raised temperature)
      _____ Option 6 (Raise pH to 12 and retain at 11.5)
      _____ Option 7 (75 percent solids with no unstabilized solids)
      _____ Option 8 (90 percent solids with unstabilized solids)
      X None or unknown
   d. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce vector attraction properties of sewage sludge: NOT APPLICABLE

      _____
   e. Describe, on this form or another sheet of paper, any other sewage sludge treatment activities, including blending, not identified in a - d above: NOT APPLICABLE

      _____

4. **Preparation of Sewage Sludge Meeting Ceiling and Pollutant Concentrations, Class A Pathogen Requirements and One of Vector Attraction Reduction Options 1-8 (EQ Sludge).**

(If sewage sludge from your facility does not meet all of these criteria, skip Question 4.)

a. Total dry metric tons per 365-day period of sewage sludge subject to this section that is applied to the land:
NOT APPLICABLE dry metric tons

b. Is sewage sludge subject to this section placed in bags or other containers for sale or give-away?
____ Yes X No

5. **Sale or Give-Away in a Bag or Other Container for Application to the Land.**

(Complete this question if you place sewage sludge in a bag or other container for sale or give-away prior to land application. Skip this question if sewage sludge is covered in Question 4.)

a. Total dry metric tons per 365-day period of sewage sludge placed in a bag or other container at your facility for sale or give-away for application to the land: NOT APPLICABLE dry metric tons

b. Attach, with this application, a copy of all labels or notices that accompany the sewage sludge being sold or given away in a bag or other container for application to the land.

6. **Shipment Off Site for Treatment or Blending.**

(Complete this question if sewage sludge from your facility is sent to another facility that provides treatment or blending. This question does not apply to sewage sludge sent directly to a land application or surface disposal site. Skip this question if the sewage sludge is covered in Questions 4 or 5. If you send sewage sludge to more than one facility, attach additional sheets as necessary.)

a. Receiving facility name: Black Swamp WWTF

b. Facility contact: Robert K. Magette

Title: Operations Manager

Phone: (804) 834-8930

c. Mailing address:

Street or P.O. Box: 4385 Beef Steak Road

City or Town: Waverly State: Virginia Zip: 23890

d. Total dry metric tons per 365-day period of sewage sludge provided to receiving facility:
unknown dry metric tons

e. List, on this form or an attachment, the receiving facility's VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the receiving facility's sewage sludge use or disposal practices:

Permit Number:	Type of Permit:
VA0088978	VPDES

f. Does the receiving facility provide additional treatment to reduce pathogens in sewage sludge from your facility?
X Yes ____ No

Which class of pathogen reduction is achieved for the sewage sludge at the receiving facility?
____ Class A X Class B ____ Neither or unknown

Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce pathogens in sewage sludge: Aerobic digestion

g. Does the receiving facility provide additional treatment to reduce vector attraction characteristics of the sewage sludge? ____ Yes ____ No

Which vector attraction reduction option is met for the sewage sludge at the receiving facility?

____ Option 1 (Minimum 38 percent reduction in volatile solids)

_____ Option 2 (Anaerobic process, with bench-scale demonstration)

X Option 3 (Aerobic process, with bench-scale demonstration)

_____ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)

_____ Option 5 (Aerobic processes plus raised temperature)

_____ Option 6 (Raise pH to 12 and retain at 11.5)

_____ Option 7 (75 percent solids with no unstabilized solids)

_____ Option 8 (90 percent solids with unstabilized solids)

_____ None unknown

Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce vector attraction properties of sewage sludge: _____

h. Does the receiving facility provide any additional treatment or blending not identified in f or g above?
_____ Yes X No

If "Yes", describe, on this form or another sheet of paper, the treatment processes not identified in f or g above:

i. If you answered "Yes" to f, g or h above, attach a copy of any information you provide to the receiving facility to comply with the "notice and necessary information" requirement of 9 VAC 25-31-530.G.

j Does the receiving facility place sewage sludge from your facility in a bag or other container for sale or give-away for application to the land? _____ Yes X No

If "Yes", provide a copy of all labels or notices that accompany the product being sold or given away.

k. Will the sewage sludge be transported to the receiving facility in a truck-mounted watertight tank normally used for such purposes? X Yes _____ No. If "No", provide description and specification on the vehicle used to transport the sewage sludge to the receiving facility.

Show the haul route(s) on a location map or briefly describe the haul route below and indicate the days of the week and the times of the day sewage sludge will be transported.

To be determined at time of disposal

7. Land Application of Bulk Sewage Sludge.

(Complete Question 7.a if sewage sludge from your facility is applied to the land, unless the sewage sludge is covered in Questions 4, 5 or 6. Complete Question 7.b, c & d only if you are responsible for land application of sewage sludge.)

a. Total dry metric tons per 365-day period of sewage sludge applied to all land application sites:
NOT APPLICABLE dry metric tons

b. Do you identify all land application sites in Section C of this application? _____ Yes _____ No

If "No", submit a copy of the Land Application Plan (LAP) with this application (LAP should be prepared in accordance with the instructions).

c. Are any land application sites located in States other than Virginia? _____ Yes _____ No

If "Yes", describe, on this form or on another sheet of paper, how you notify the permitting authority for the States where the land application sites are located. Provide a copy of the notification.

d. Attach a copy of any information you provide to the owner or lease holder of the land application sites to comply with the "notice and necessary" information requirement of 9 VAC 25-31-530 F and/or H (Examples may be obtained in Appendix IV).

8. Surface Disposal.

(Complete Question 8 if sewage sludge from your facility is placed on a surface disposal site.)

a. Total dry metric tons per 365-day period of sewage sludge from your facility placed on all surface disposal sites: NOT APPLICABLE dry metric tons

b. Do you own or operate all surface disposal sites to which you send sewage sludge for disposal?
_____ Yes _____ No

If "No", answer questions c - g for each surface disposal site that you do not own or operate. If you send sewage sludge to more than one surface disposal site, attach additional pages as necessary.

c. Site name or number: _____

d. Contact person: _____

Title: _____

Phone: (_____) _____

Contact is: _____ Site Owner _____ Site operator

e. Mailing address:

Street or P.O. Box: _____

City or Town: _____ State: _____ Zip: _____

f. Total dry metric tons per 365-day period of sewage sludge from your facility placed on this surface disposal site: _____ dry metric tons

g. List, on this form or an attachment, the surface disposal site VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the sewage sludge use or disposal practices at the surface disposal site:

Permit Number:	Type of Permit:
_____	_____
_____	_____

9. Incineration.

(Complete Question 9 if sewage sludge from your facility is fired in a sewage sludge incinerator.)

a. Total dry metric tons per 365-day period of sewage sludge from your facility fired in a sewage sludge incinerator: NOT APPLICABLE dry metric tons

b. Do you own or operate all sewage sludge incinerators in which sewage sludge from your facility is fired?
_____ Yes _____ No

If "No", answer questions c - g for each sewage sludge incinerator that you do not own or operate. If you send sewage sludge to more than one sewage sludge incinerator, attach additional pages as necessary.

c. Incinerator name or number: _____

d. Contact person: _____

Title: _____

Phone: (_____) _____

Contact is: _____ Incinerator Owner _____ Incinerator Operator

e. Mailing address:

Street or P.O. Box: _____

City or Town: _____ State: _____ Zip: _____

f. Total dry metric tons per 365-day period of sewage sludge from your facility fired in this sewage sludge incinerator: _____ dry metric tons

g. List on this form or an attachment the numbers of all other federal, state or local permits that regulate the firing

of sewage sludge at this incinerator:

Permit Number: Type of Permit:

_____ _____

_____ _____

10. Disposal in a Municipal Solid Waste Landfill.

(Complete Question 10 if sewage sludge from your facility is placed on a municipal solid waste landfill. Provide the following information for each municipal solid waste landfill on which sewage sludge from your facility is placed. If sewage sludge is placed on more than one municipal solid waste landfill, attach additional pages as necessary.)

a. Landfill name: _____

b. Contact person: _____

Title: _____

Phone: (_____) _____

Contact is: _____ Landfill Owner _____ Landfill Operator

c. Mailing address:

Street or P.O. Box: _____

City or Town: _____ State: _____ Zip: _____

d. Landfill location.

Street or Route #: _____

County: _____

City or Town: _____ State: _____ Zip: _____

e. Total dry metric tons per 365-day period of sewage sludge placed in this municipal solid waste landfill:

_____ dry metric tons

f. List, on this form or an attachment, the numbers of all federal, state or local permits that regulate the operation of this municipal solid waste landfill:

Permit Number: Type of Permit:

_____ _____

_____ _____

g. Does sewage sludge meet applicable requirements in the Virginia Solid Waste Management Regulation, 9 VAC 20-80-10 et seq., concerning the quality of materials disposed in a municipal solid waste landfill?

_____ Yes _____ No

h. Does the municipal solid waste landfill comply with all applicable criteria set forth in the Virginia Solid Waste Management Regulation, 9 VAC 20-80-10 et seq.? _____ Yes _____ No

i. Will the vehicle bed or other container used to transport sewage sludge to the municipal solid waste landfill be watertight and covered? _____ Yes _____ No

Show the haul route(s) on a location map or briefly describe the route below and indicate the days of the week and time of the day sewage sludge will be transported.

Leave the Black Swamp WWTF by turning right onto Route 626 (Beef Steak Road), travel 1.2 miles to Route 602 (Cabin Point Road) . turn le

FACILITY NAME: Stony Creek WWTF VPDES PERMIT NUMBER: VA0062669

SECTION C. LAND APPLICATION OF BULK SEWAGE SLUDGE

Complete this section for sewage sludge that is land applied unless any of the following conditions apply:

- *The sewage sludge meets the Table 1 ceiling concentrations, the Table 3 pollutant concentrations, Class A pathogen requirements and one of the vector attraction reduction options 1-8 (fill out B.4 instead) (EQ Sludge); or*
- *The sewage sludge is sold or given away in a bag or other container for application to the land (fill out B.5 instead); or*
- *You provide the sewage sludge to another facility for treatment or blending (fill out B.6 instead).*

Complete Section C for every site on which the sewage sludge that you reported in B.7 is land applied.

1. **Identification of Land Application Site.**
   a. Site name or number: NOT APPLICABLE
   b. Site location (Complete i and ii)
      i. Street or Route#: _____
      County: _____
      City or Town: _____ State: _____ Zip: _____
      ii. Latitude: _____ Longitude: _____
      Method of latitude/longitude determination
      _____ USGS map _____ Filed survey _____ Other
   c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

2. **Owner Information.**
   a. Are you the owner of this land application site? _____ Yes _____ No
   b. If "No", provide the following information about the owner:
      Name: _____
      Street or P.O. Box: _____
      City or Town: _____ State: _____ Zip: _____
      Phone: (_____) _____

3. **Applier Information:**
   a. Are you the person who applies, or who is responsible for application of, sewage sludge to this land application site?
      _____ Yes _____ No
   b. If "No", provide the following information for the person who applies the sewage sludge:
      Name: _____
      Street or P.O. Box: _____
      City or Town: _____ State: _____ Zip: _____
      Phone: (_____) _____
   c. List, on this form or an attachment, the numbers of all federal, state or local permits that regulate the person who applies sewage sludge to this land application site:
      Permit Number: Type of Permit:
      _____ _____
      _____ _____

4. **Site Type.** Identify the type of land application site from among the following:
   _____ Agricultural land _____ Reclamation site _____ Forest
   _____ Public contact site _____ Other (describe _____

5. **Vector Attraction Reduction.**
   Are any vector attraction reduction requirements met when sewage sludge is applied to the land application site?

_____ Yes _____ No If "Yes", answer a and b.

a. Indicate which vector attraction reduction option is met:

_____ Option 9 (Injection below land surface)

_____ Option 10 (Incorporation into soil within 6 hours)

b. Describe, on this form or on another sheet of paper, any treatment processes used at the land application site to reduce the vector attraction properties of sewage sludge:

_____

_____

6. **Cumulative Loadings and Remaining Allotments.**

(Complete Question 6 only if the sewage sludge applied to this site since July 20, 1993 is subject to the cumulative pollutant loading rates (CPLRs) - see instructions.)

a. Have you contacted DEQ or the permitting authority in the state where the sewage sludge subject to the CPLRs will be applied to ascertain whether bulk sewage sludge subject to the CPLRs has been applied to this site since July 20, 1993? _____ Yes _____ No

If "No", sewage sludge subject to the CPLRs may not be applied to this site.

If "Yes", provide the following information:

Permitting authority: _____

Contact person: _____

Phone: (_____) _____

b. Based upon this inquiry, has bulk sewage sludge subject to the CPLRs been applied to this site since July 20, 1993? _____ Yes _____ No If "No", skip the rest of Question 6. If "Yes", answer questions c - e.

c. Site size, in hectares: _____ (one hectare = 2.471 acres)

d. Provide the following information for every facility other than yours that is sending or has sent sewage sludge subject to the CPLRs to this site since July 20, 1993. If more than one such facility sends sewage sludge to this site, attach additional pages as necessary.

Facility name: _____

Facility contact: _____

Title: _____

Phone: (_____) _____

Mailing address.

Street or P.O. Box: _____

City or Town: _____ State: _____ Zip: _____

e. Provide the total loading and allotment remaining, in kg/hectare, for each of the following pollutants:

	Cumulative loading	Allotment remaining
Arsenic	_____	_____
Cadmium	_____	_____
Copper	_____	_____
Lead	_____	_____
Mercury	_____	_____
Nickel	_____	_____
Selenium	_____	_____
Zinc	_____	_____

Complete Questions 7-12 below only if you apply sewage sludge, or you are responsible for land application of sewage sludge. Information required by these questions may be prepared as attachments to this form. Skip the following questions if you contract land application to someone else (as indicated under Section A.7) who is responsible for the operation.

7. **Sludge Characterization.** Use the table below or a separate attachment, provide at least one analysis for each parameter.

PCBs (mg/kg)	
pH (S. U.)	
Percent Solids (%)	
Ammonium Nitrogen (mg/kg)	
Nitrate Nitrogen (mg/kg)	
Total Kjeldahl Nitrogen (mg/kg)	
Total Phosphorus (mg/kg)	
Total Potassium (mg/kg)	
Alkalinity as $CaCO_3$* (mg/kg)	

* Lime treated sludge (10% or more lime by dry weight) should be analyzed for percent $CaCO_3$.

8. **Storage Requirements.**

Existing and proposed sludge storage facilities must provide an estimated annual sludge balance on a monthly basis incorporating such factors as storage capacity, sludge production and land application schedule. Include pertinent calculations justifying storage requirements.

Proposed sludge storage facilities must also provide the following information:

a. A sludge storage site layout on a 7.5 minute topographic quadrangle or other appropriate scaled map to show the following topographic features of the surrounding landscape to a distance of 0.25 mile. Clearly mark the property line.

1) Water wells, abandoned or operating
2) Surface waters
3) Springs
4) Public water supply(s)
5) Sinkholes
6) Underground and/or surface mines
7) Mine pool (or other) surface water discharge points
8) Mining spoil piles and mine dumps
9) Quarry(s)
10) Sand and gravel pits
11) Gas and oil wells
12) Diversion ditch(s)
13) Agricultural drainage ditch(s)
14) Occupied dwellings, including industrial and commercial establishments
15) Landfills or dumps
16) Other unlined impoundments
17) Septic tanks and drainfields
18) Injection wells
19) Rock outcrops

b. A topographic map of sufficient detail to clearly show the following information:

1) Maximum and minimum percent slopes
2) Depressions on the site that may collect water
3) Drainageways that may attribute to rainfall run-on to or runoff from this site
4) Portions of the site (if any) which are located with the 100-year floodplain and how the storage facility will be protected from flooding

c. Data and specifications for the storage facility lining material.

d. Plan and cross-sectional views of the storage facility.

e. Depth from the bottom of the storage facility to the seasonal high water table and separation distance to the permanent water table.

9. **Land Area Requirements.** Provide calculations justifying the land area requirements for land application of sewage

sludge taking into consideration average soil productivity group, crop(s) to be grown and most limiting factor(s) of the sewage sludge, specifically Plant Available Nitrogen (PAN), Calcium Carbonate Equivalence (CCE), and metal loadings (CPLR sewage sludge only), where applicable. Relate PAN, CCE, and metal loadings to demonstrate the most limiting factor for land application.

10. **Landowner Agreement Forms.** Provide a properly completed Sewage Sludge Application Agreement Form (attached) for each landowner if sewage sludge is to be applied onto land not owned by the applicant.

11. **Ground Water Monitoring.**

Are any ground water monitoring data available for this land application site? _____ Yes _____ No

If "Yes", submit the ground water monitoring data with this permit application. Also submit a written description of the well locations, approximate depth to ground water, and the ground water monitoring procedures used to obtain these data.

12. **Land Application Site Information.**

(Complete Items a-d for sites receiving infrequent application - land application of sewage sludge up to the agronomic rate at a frequency of once in a 3 year period; complete Items a-h for sites receiving frequent application - land application of sewage sludge in excess of 70% the agronomic rate at a frequency greater than once in a 3 year period)

a. Provide a general location map for each county which clearly indicates the location of all the land application sites.

b. For each land application site provide a site plan of sufficient detail to clearly show the concerned landscape features and associated buffer zones (See instructions). Provide a legend for each landscape feature and the net acreage for each field taking into account the proposed buffer zones.

c. In order to ensure that land application of bulk sewage sludge will not impact federally listed threatened or endangered species or federally designated critical habitat, the applicant must notify the field office of the U. S. Department of the Interior, Fish and Wildlife Service (FWS), by a letter, the proposed land application activities with the identification of the land application sites. The address and phone number of FWS are provided below.

U.S. Fish and Wildlife Service
Virginia Field Office
P.O. Box 480
White Marsh, VA 23183
TEL: (804) 693-6694

Provide a copy of the notification letter with this application form.

d. Provide a soil survey map, preferably photographically based, with the field boundaries clearly marked. (A USDA-SCS soil survey map should be provided, if available.)

Provide a detailed legend for each soil survey map which uses accepted USDA-SCS descriptions of the typifying pedon for each soil series (soil type). Complex associations may be described as a range of characteristics. Soil descriptions shall include as a minimum the following information.

1) Soil symbol
2) Soil series, textural phase and slope range
3) Depth to seasonal high water table
4) Depth to bedrock
5) Estimated soil productivity group (for the proposed crop rotation)

Item e - h are required for sites receiving frequent application of sewage sludge

e. In order to verify the information provided in item d, characterize the soil at each land application site. Representative soil borings or test pits to a depth of five feet or to bedrock if shallower, are to be coordinated for the typifying pedon of each soil series (soil type). Soil descriptions shall include as a minimum the following information:

1) Soil symbol
2) Soil series, textural phase and slope range
3) Depth to seasonal high water table
4) Depth to bedrock
5) Estimated soil productivity group (for the proposed crop rotation)

f. Collect and analyze soil samples from each field, weighted to best represent each of the soil borings performed for Item e. Using the table below or a separate attachment, provide at least one analysis per sample for each of the

following parameters.

Soil Organic Matter (%) _____
Soil pH (std. units) _____
Cation Exchange Capacity (meq/100g) _____
Total Nitrogen (ppm) _____
Organic Nitrogen (ppm) _____
Ammonia Nitrogen (ppm) _____
Nitrate Nitrogen (ppm) _____
Available Phosphorus (ppm) _____
Exchangeable Potassium (mg/100g) _____
Exchangeable Sodium (mg/100g) _____
Exchangeable Calcium (mg/100g) _____
Exchangeable Magnesium (mg/100g) _____
Arsenic (ppm) _____
Cadmium (ppm) _____
Copper (ppm) _____
Lead (ppm) _____
Mercury (ppm) _____
Molybdenum (ppm) _____
Nickel (ppm) _____
Selenium (ppm) _____
Zinc (ppm) _____
Manganese (ppm) _____
Particle Size Analysis or USDA Textural Estimate (%) _____

g. Relate the crop nutrient needs to anticipated yields, soil productivity rating and the various fertilizer or nutrient sources from sludge and chemical fertilizers. Describe any specialized agronomic management practices which may be required as a result of high soil pH. If the sludge is expected to possess an unusually high CCE or other unusual properties, provide a description of any plant tissue testing, supplemental fertilization or intensive agronomic management practices which may be necessary.

h. Using a narrative format and referencing any related charts, describe the proposed cropping system. Show how the crop rotation and management will be coordinated with the design of the land application system. Include any supplemental fertilization program, soil testing and the coordination of tillage practices, planting and harvesting schedules and timing of land application.

FACILITY NAME: Stony Creek WWTF **VPDES PERMIT NUMBER:** VA0062669

SEWAGE SLUDGE APPLICATION AGREEMENT

This sewage sludge application agreement is made on this date NOT APPLICABLE between _____, referred to here as "landowner", and _____, referred to here as the "Permittee".

Landowner is the owner of agricultural land shown on the map attached as Exhibit A and designated there as _____ ("landowner's land"). Permittee agrees to apply and landowner agrees to comply with certain permit requirements following application of sewage sludge on landowner's land in amounts and in a manner authorized by VPDES permit number _____ which is held by the Permittee.

Landowner acknowledges that the appropriate application of sewage sludge will be beneficial in providing fertilizer and soil conditioning to the property. Moreover, landowner acknowledges having been expressly advised that, in order to protect public health, the following site restrictions must be adhered to when sewage sludge receives Class B treatment for pathogen reduction:

1. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge;
2. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil;
3. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil;
4. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge;
5. Animals shall not be grazed on the land for 30 days after application of sewage sludge;
6. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the State Water Control Board;
7. Public access to land with a high potential for public exposure shall be restricted for one year after application of sewage sludge;
8. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.
9. Tobacco, because it has been shown to accumulate cadmium, should not be grown on landowner's land for three years following the application of sewage sludge borne cadmium equal to or exceeding 0.5 kilograms/hectare (0.45 pounds/acre).

Permittee agrees to notify landowner or landowner's designee of the proposed schedule for sewage sludge application and specifically prior to any particular application to landowner's land. This agreement may be terminated by either party upon written notice to the address specified below.

Landowner:	Permittee:
_____	_____
Signature	Signature
_____	_____
Mailing Address	Mailing Address

FACILITY NAME: Stony Creek WWTF VPDES PERMIT NUMBER: VA0062669

SECTION D. SURFACE DISPOSAL

Complete this section only if you own or operate a surface disposal site. Provide the information for each active sewage sludge unit.

1. **Information on Active Sewage Sludge Units.**
   a. Unit name or number: NOT APPLICABLE
   b. Unit location
      i. Street or Route#: _____
      County: _____
      City or Town: _____ State: _____ Zip: _____
      ii. Latitude: _____ Longitude: _____
      Method of latitude/longitude determination
      _____ USGS map _____ Filed survey _____ Other
   c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.
   d. Total dry metric tons of sewage sludge placed on the active sewage sludge unit per 365-day period:
      _____ dry metric tons.
   e. Total dry metric tons of sewage sludge placed on the active sewage sludge unit over the life of the unit:
      _____ dry metric tons.
   f. Does the active sewage sludge unit have a liner with a minimum hydraulic conductivity of 1×10^{-7} cm/sec?
      _____ Yes _____ No If "Yes", describe the liner or attach a description.
      _____
      _____
   g. Does the active sewage sludge unit have a leachate collection system? _____ Yes _____ No
      If "Yes", describe the leachate collection system or attach a description. Also, describe the method used for leachate disposal and provide the numbers of any federal, state or local permits for leachate disposal:
      _____
      _____
      _____
   h. If you answered "No" to either f or g, answer the following:
      Is the boundary of the active sewage sludge unit less than 150 meters from the property line of the surface disposal site? _____ Yes _____ No If "Yes", provide the actual distance in meters: _____
   i. Remaining capacity of active sewage sludge unit, in dry metric tons: _____ dry metric tons
      Anticipated closure date for active sewage sludge unit, if known: _____ (MM/DD/YYYY)
      Provide with this application a copy of any closure plan developed for this active sewage sludge unit.

2. **Sewage Sludge from Other Facilities.**
   Is sewage sludge sent to this active sewage sludge unit from any facilities other than yours? _____ Yes _____ No
   If "Yes", provide the following information for each such facility, attach additional sheets as necessary.
   a. Facility name: _____
   b. Facility contact: _____
      Title: _____
      Phone: (_____) _____
   c. Mailing address:
      Street or P.O. Box: _____
      City or Town: _____ State: _____ Zip: _____

d. List, on this form or an attachment, the facility's VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the facility's sewage sludge management practices:

Permit Number: Type of Permit:

_____ _____

_____ _____

e. Which class of pathogen reduction is achieved before sewage sludge leaves the other facility?
_____ Class A _____ Class B _____ Neither or unknown

f. Describe, on this form or on another sheet of paper, any treatment processes used at the other facility to reduce pathogens in sewage sludge: _____

_____

_____

g. Which vector attraction reduction option is achieved before sewage sludge leaves the other facility?

_____ Option 1 (Minimum 38 percent reduction in volatile solids)
_____ Option 2 (Anaerobic process, with bench-scale demonstration)
_____ Option 3 (Aerobic process, with bench-scale demonstration)
_____ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
_____ Option 5 (Aerobic processes plus raised temperature)
_____ Option 6 (Raise pH to 12 and retain at 11.5)
_____ Option 7 (75 percent solids with no unstabilized solids)
_____ Option 8 (90 percent solids with unstabilized solids)
_____ None or unknown

h. Describe, on this form or another sheet of paper, any treatment processes used at the other facility to reduce vector attraction properties of sewage sludge: _____

_____

_____

i. Describe, on this form or another sheet of paper, any other sewage sludge treatment activities performed by the other facility that are not identified in e - h above: _____

_____

_____

3. Vector Attraction Reduction.

a. Which vector attraction reduction option, if any, is met when sewage sludge is placed on this active sewage sludge unit?

_____ Option 9 (Injection below land surface)
_____ Option 10 (Incorporation into soil within 6 hours)
_____ Option 11 (Covering active sewage sludge unit daily)

b. Describe, on this form or another sheet of paper, any treatment processes used at the active sewage sludge unit to reduce vector attraction properties of sewage sludge: _____

_____

_____

4. Ground Water Monitoring.

a. Is ground water monitoring currently conducted at this active sewage sludge unit or are ground water monitoring data otherwise available for this active sewage sludge unit? _____ Yes _____ No

If "Yes", provide a copy of available ground water monitoring data. Also provide a written description of the well locations, the approximate depth to ground water, and the ground water monitoring procedures used to obtain these

data.

b. Has a ground water monitoring program been prepared for this active sewage sludge unit?
_____ Yes _____ No If "Yes", submit a copy of the ground water monitoring program with this application.

c. Have you obtained a certification from a qualified ground water scientist that the aquifer below the active sewage sludge unit has not been contaminated? _____ Yes _____ No

If "Yes", submit a copy of the certification with this application.

5. Site-Specific Limits.

Are you seeking site-specific pollutant limits for the sewage sludge placed on the active sewage sludge unit?
_____ Yes _____ No If "Yes", submit information to support the request for site-specific pollutant limits with this application.

VPDES Permit Application Addendum

1. **Entity to whom the permit is to be issued:** SUSSEX SERVICE AUTHORITY

Who will be legally responsible for the wastewater treatment facilities and compliance with the permit? This may or may not be the facility or property owner.

2. **Is this facility located within city or town boundaries?** Yes ☐ No X

3. **Provide the tax map parcel number for the land where the discharge is located.** 67-A-14A

4. **For the facility to be covered by this permit, how many acres will be disturbed during the next five years due to new construction activities?** None

5. **What is the design average effluent flow of this facility?** 0.040 MGD

For industrial facilities, provide the max. 30-day average production level, include units:

Not Applicable

In addition to the design flow or production level, should the permit be written with limits for any other discharge flow tiers or production levels? Yes X No ☐

If "Yes", please identify the other flow tiers (in MGD) or production levels:

0.060

Please consider the following questions for both the flow tiers and the production levels (if applicable): Do you plan to expand operations during the next five years? Is your facility's design flow considerably greater than your current flow?

6. **Nature of operations generating wastewater:**

Residential homes, two hotels, travel plaza and five restaurants

90 % of flow from domestic connections/sources

Number of private residences to be served by the treatment works: _____

10 % of flow from non-domestic connections/sources

7. **Mode of discharge:** X Continuous ☐ Intermittent ☐ Seasonal

Describe frequency and duration of intermittent or seasonal discharges:

_____

8. **Identify the characteristics of the receiving stream at the point just above the facility's discharge point:**

X Permanent stream, never dry

___ Intermittent stream, usually flowing, sometimes dry

___ Ephemeral stream, wet-weather flow, often dry

___ Effluent-dependent stream, usually or always dry without effluent flow

___ Lake or pond at or below the discharge point

___ Other: _____

9. **Approval Date(s):**

O & M Manual 11/7/05 **Sludge/Solids Management Plan** 5/2/05

Have there been any changes in your operations or procedures since the above approval dates? Yes X No ☐

SEE ATTACHED CERTIFICATE TO OPERATE FOR ADDITION OF SURFACE AERATORS

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
PIEDMONT REGIONAL OFFICE
4949A Cox Road, Glen Allen, Virginia 23060
(804) 527-5020 Fax (804) 527-5106
www.deq.virginia.gov

Mary Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Michael P. Murphy
Regional Director

July 3, 2014

Mike Kearns
Deputy Director
Sussex Service Authority
4385 Beef Steak Road
Waverly, VA 23890
Transmitted electronically: mkearns@ssa-va.org

Subject: Certificate to Operate (CTO) - PT Log # 26124, Stony Creek WWTP Improvements, VPDES Permit No. VA0062669

Dear Mr. Kearns:

The design engineer, Mr. Henry M. Bugg, P.E., with B&B Consultants, Inc., certified in the Certificate to Operate (CTO) application received on June 5, 2014 that the facility's project has been completed, substantially in accordance with the approved plans. In accordance with the Code of Virginia, Title 2.1, Section 62.1-44.19, attached please find the CTO for this project. The owner is authorized to operate these facilities in accordance with the Sewage Collection and Treatment Regulations.

If you would like further information regarding the project or if you have any questions regarding this matter, please contact Adam Eller of my staff at (804) 527-5046 or adam.eller@deq.virginia.gov.

Sincerely,

Emilee C. Adamson

Emilee C. Adamson
VPDES Permits Manager

cc: Henry M. Bugg: (hmbugg@bandbcons.com)
DEQ-PRO VWP Permit Program: (Allison.Dunaway@deq.virginia.gov)
William Travis Luter Sr., Building Official, Sussex County: (tluter@sussexcountyva.com)
File: CTC/CTO, ECM

Department of Environmental Quality
APPLICATION for CERTIFICATE TO OPERATE
Under the Sewage Collection and Treatment Regulations 9 VAC 25-790
and/or the Water Reclamation and Reuse Regulation 9 VAC 25-740

See Instructions. Submit 1 copy of this form and any attachments. Form will expand as you enter information.

Project Title: (as it appears on plans) Stony Creek WWTP Improvements P.E. Seal Date on Cover: April 8, 2014 Specifications Title and Date: NA	RECEIVED PRO JUN 05 2014
Location of Project:	County/City: Stony Creek, VA
Receiving Wastewater Collection System(s): Stony Creek Collection System	
Receiving Sewage Treatment Plant(s): NA	
PROJECT OWNER:	**RESPONSIBLE ENGINEER**
Owner Contact Name: Mike Kearns	Name: Henry M. Bugg
Title: Deputy Director	Company Name: B & B Consultants, Inc.
Address: Sussex Service Authority 4385 Beef Steak Road, Waverly, VA 23890	Address: 212 East Ferrell Street P. O. Box 429 South Hill, VA 23970
Phone: 804-834-6903	Phone: 434-447-7621
Email: mkearns@ssa-va.org	Email: hmbugg@bandbcons.com
Owner Signature and Date: Michael P. Kearns 6/2/14	

PTL NUMBER FROM CERTIFICATE TO CONSTRUCT: #26087

Attach Copy of the original Certificate to Construct if issued prior to November 9, 2008. If applicable, provide verification of compliance with any conditions in the Certificate to Construct.

Design Flow: (a) average daily flow (MGD): 0.419 (b) peak flow (MGD): 0.103

For sewage treatment plant, water reclamation or satellite reclamation projects, provide the VPDES/VPA Permit Number: VA0062669

Is a new Discharge Monitoring Report (DMR) or other monthly monitoring report required? Yes ☐ No ☒

For Pump Stations, Sewage Treatment Plants, and Reclamation Systems, check Reliability Class: I ☐ II ☒ III ☐ NA ☐

Two options are provided for the Statement of Completion, depending on whether the project is being authorized under the Sewage Collection and Treatment Regulations, the Water Reclamation and Reuse Regulations, or BOTH. Please check the appropriate box and then provide signature and seal below as indicated.

☒ *The following statement of completion for issuance of a Certificate to Operate under the Sewage Collection and Treatment Regulations must be signed and sealed by the responsible engineer.* (DEQ will not conduct a confirming inspection.)

"The construction of the project has been completed in accordance with the referenced plans and specifications or revised only in accordance with 9 VAC 25-790-180.B, and inspections have been performed to make this statement in accordance with Section 9 VAC 25-790-180.C.1 of the Sewage Collection and Treatment Regulations."

Licensed Engineer's Signature and original seal (signed and dated)

☐ *The following statement of completion for issuance of a Certificate to Operate under the Water Reclamation and Reuse Regulation must be signed and sealed by the responsible engineer.* (DEQ will not conduct a confirming inspection.)

"The construction of the project has been completed in accordance with the referenced plans and specifications or revised only in accordance with 9 VAC 25-740-120-B.2.b. and inspections have been performed to make this statement in accordance with Section 9 VAC 25-40-120.B.3.a. of the Water Reclamation and Reuse Regulations."

Licensed Engineer's Signature and original seal (signed and dated)

For DEQ use only:

In accordance with *Code of Virginia* 1950, as amended, Title 62.1, Section 62.1-44.19, this form, signed by the appropriate DEQ representative, serves as the **Certificate to Operate** for the referenced project.

Emilee C. Adamson	Emilee C. Adamson	July 3, 2014	26124
Name	Signature	Date	CTO PTL Number

Department of Environmental Quality Authorized Representative

An Operation and Maintenance Manual must be submitted to the DEQ Regional Office in accordance with 9 VAC 25-790 for sewage treatment plants, 9 VAC 25-740 for water reclamation systems and satellite reclamation systems and VPDES or VPA permit requirements.

For pump stations, an Operation and Maintenance Manual must be maintained for the facility in accordance with 9 VAC 25-790, but is NOT to be submitted to DEQ. The pump station must be operated and maintained in accordance with that manual.

Sussex Service Authority

4385 Beef Steak Road
Waverly, Virginia 23890
Phone: (804) 834-8930
Fax: (804) 834-8933

April 11, 2014

Adam Eller
Environmental Specialist II
Virginia DEQ, Piedmont Regional Office
4949-A Cox Road
Glen Allen, Virginia 23060

VIA: Hand Delivered

RE: Application for Certificate to Construct
Stony Creek Wastewater Treatment Facility
VPDES Permit No. VA0062669

Dear Mr. Eller:

Enclosed please find our completed Application for a Certificate to Construct (CTC) the Stony Creek Waste Water Facility improvements. This CTC was prepared by B & B Consulting, Inc. who has knowledge of this facility due to their prior involvement.

We would greatly appreciate an expedited review of this submission so that these improvements can be completed prior to the onset of the summer temperatures.

If you have any questions regarding this submission, please contact me at (804)834-6903.

Respectfully submitted,

Michael P. Kearns
Engineer / Deputy Director

CC: Robert Magette, Operations Manager, Sussex Service Authority
Frank H. Irving, III, Executive Director, Sussex Service Authority
Henry M. Bugg, P.E. B & B Consultants, Inc.

Virginia Department of Environmental Quality
APPLICATION for CERTIFICATE TO CONSTRUCT (CTC)
For Municipal Sewage Collection, Treatment, and/or Reclamation Systems

See Instructions. Do not submit plans and specifications. Submit 1 copy of this form with all attachments. Form will expand as you enter information.

Project Title: (as it appears on plans) Stony Creek WWTP Improvements P.E. Seal Date on Cover: April 8, 2014 Specifications Title and Date: NA	
Location of Project:	County/City: Stony Creek, VA
Receiving Wastewater Collection System(s): Stony Creek Collection System	
Receiving Sewage Treatment Plant(s)/Reclamation System: NA	
PROJECT OWNER:	**PROJECT ENGINEER**
Owner Contact Name: Mike Kearns	Name: Henry M. Bugg
Title: Deputy Director	Company Name: B & B Consultants, Inc.
Address: Sussex Service Authority 4385 Beef Steak Rd, Waverly, VA 23890	Address: 212 E. Ferrell Street PO Box 429, South Hill, VA 23970
Phone: 804-834-6903	Phone: 434-447-7621
Email: mkearns@ssa-va.org	Email: hmbugg@bandbcons.com
Owner Signature and date: Michael P. Kearns 4/11/14	

For Sewage Treatment Works and Sewage Collection Systems:

Attach Project Description Add surface aerators to existing two cell aerated lagoon

Attach Letter(s) of Acceptance from Receiving Facility/Utility for sewage collection system projects NA

Attach Reliability Class: (1) For Pump Stations attach Reliability Class Worksheet. (2) For Sewage Treatment Plants note the Reliability Class rating from the VPDES or VPA permit and method of meeting reliability classification requirements.

Reliability Class 2. Measures taken to satisfy this class requirement is same as existing WWTP

For a sewage treatment plant project, provide the VPDES or VPA permit number: VA0062669

Design Sewage Flow (Sewage Plant): (a) average daily flow (MGD): 0.419 (b) peak daily flow (MGD): 0.103

Design Sewage Flow (Pump Station): (a) average daily flow (MGD): NA (b) peak hour flow (MGD): NA

Please check the appropriate components of your project:

Gravity and/or Vacuum Sewer	☐	New Sewage Treatment Plant	☐
Pump Station(s)	☐	Modification of Existing Sewage Treatment Plant	☒
Force Main(s)	☐	Expansion of Existing Sewage Treatment Plant	☐

For Reclamation or Satellite Reclamation System, Attach Page 2: Page 2 Attached? Yes ☐ No ☒

The following statement must be signed and sealed by the Virginia licensed design engineer:

"As discussed in 9 VAC 25-790-240.C., the referenced design documents are in substantial compliance with Part III - Manual of Practice For Sewerage Systems and Treatment Works, of the Sewage Collection and Treatment Regulations (9 VAC 25-790-310 et seq.)"

COMMONWEALTH OF VIRGINIA
HENRY M. BUGG
Lic. No. 05194
4/8/14
PROFESSIONAL ENGINEER

Licensed Design Engineer's Signature and original seal (signed and dated)

☐ **Design exceptions and justifications are attached in accordance with 9 VAC 25-790-240.C.**

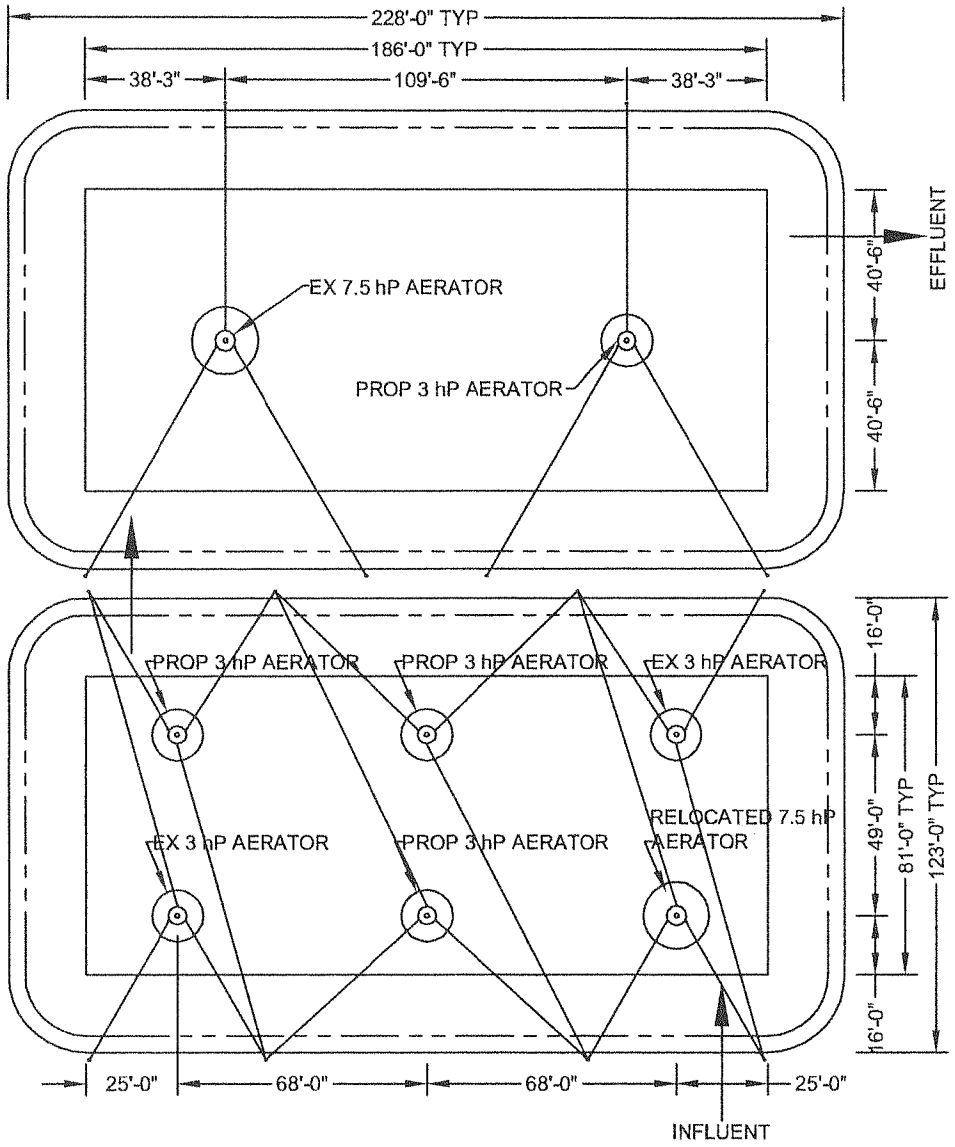
For DEQ use only:

In accordance with the *Code of Virginia* 1950, as amended, Title 62.1, Section 62.1-44.19, this form, signed by the appropriate DEQ representative, constitutes your Certificate to Construct. This Certificate is valid for a period of five years from the date of issuance. Other permits and authorizations may be necessary. Please contact your Regional DEQ Office if you have any questions.

Name	Signature	Date	CTC PTL Number

Department of Environmental Quality Authorized Representative

Note: Once the project is complete, an application for a Certificate to Operate must be submitted to the appropriate DEQ Regional office.



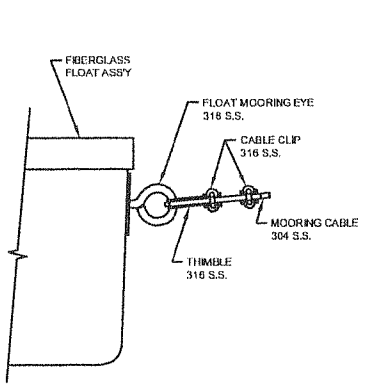
CALCULATIONS:
THE MANUFACTURER'S CALCS (PAGES 1-6) ARE INCLUDED AS PART OF THE DESIGN CONSTRUCTION DOCUMENTS.

COMMONWEALTH OF VIRGINIA
HENRY M. BUGG
Lic. No. 05194
4/8/14
PROFESSIONAL ENGINEER

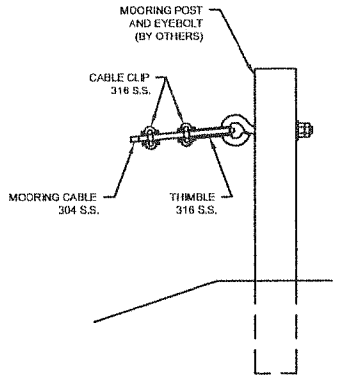
LAGOON #1:
RELOCATE (1) 7.5 hP AERATOR AND INSTALL (3) 3 hP AQUA-JET AERATORS OR APPROVED EQUAL AS SHOWN ON DRAWING AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

LAGOON #2:
INSTALL (1) 3 hP AQUAT-JET AERATORS OR APPROVED EQUAL AS SHOWN ON DRAWING AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

ELECTRICAL:
ALL ELECTRICAL COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE BY A LICENSED ELECTRICIAN.



FLOAT MOORING DETAIL



SHORE MOORING DETAIL

SCALE: 1" = 50'	APRIL 07, 2014

PREPARED BY:
B & B Consultants, Inc.
Engineers - Architects - Surveyors
Planners - Lab Analysts
South Hill, Chase City, & South Boston, Virginia

SITE LAYOUT PLAN

STONY CREEK WWTP IMPROVEMENTS
SUSSEX COUNTY, VIRGINIA

Aeration Calculations
for
Stony Creek WWTP Improvement
Stony Creek, VA
Sussex Service Authority
April 8, 2014

Objective: Recommend quantity and size of Aqua-Jet aerators to upgrade an existing lagoon system to accommodate 50,000 GPD flow rate.

Design Data:

Wastewater Characteristics

Design Flow	=	0.05 MGD
Wastewater Temp	=	25 °C (summer, assumed)
	=	10 °C (winter, assumed)
Influent BOD	=	200 mg/l
Influent TSS	=	200 mg/l
Influent TKN	=	30 mg/l

Effluent Required

Effluent BOD		30 mg/l
Effluent TSS		30 mg/l

Basin Dimensions

		Lagoon 1	Lagoons 2
WS Dimensions	=	262 ft x 117 ft	262 ft x 117 ft
Bottom Dimensions	=	226 ft x 81 ft	226 ft x 81 ft
Water Depth	=	6 ft	6 ft
Side Slope	=	3:1	3:1
Volume at 6' SWD	=	1.09 MG	1.09 MG
Construction	=	lined	lined
Elevation	=	665 ft	665 ft

Scope:

The existing aerated lagoon system has 2 x 1-MG lagoons that are operated in series. Aqua-Jet aerators are sized to provide oxygen transfer and mixing to meet the effluent requirements at 50,000 GPD design flow rate.

Calculations:

Lagoons 1 - Complete Mix

Hydraulic Retention Time

HRT = 1.09 MG / 0.05 MG

= 21.8 days

BOD Removal

Based on complete mix kinetics, the Eckenfelder Model calculates the following effluent characteristics from cell 1:

	Summer	Winter
Soluble BOD (mg/l)	6	8

Refer to attached Lagoon 1 BOD removal calculations for details.

Actual Oxygen Requirement

The oxygen demand is based on 1.5 lb O2 / lb BOD removed and 4.6 lb O2 / lb TKN subject to nitrification.

AOR (BOD) = 1.5 lb/lb x (200 - 6) mg/l x 0.05 MGD x 8.34 / 24 hr

= 5 lb O_2 / hr

Nutrient TKN = 0.05 mg TKN /mg BOD x 200 mg/l

= 10 mg/l

TKN Remaining = 30 mg/l - 10 mg/l

= 20 mg/l

AOR (TKN) = 4.6 lb/lb x 20 mg/l x 0.05 MGD x 8.34 / 24 hr

= 2 lb O_2 / hr

Therefore:

AOR (Total) = 7 lb O_2 / hr

Field Oxygen Transfer Efficiency

$$FTE = \frac{SOTE \times [(Cs \times \beta) - Cr] \times 1.024^{(T-20)} \times \alpha}{9.09}$$

where:

SOTE	=	3.0 lbs O_2 / BHP-hr
T	=	25 °C (assumed)
Cs	=	8.06 mg/l (at 25oC and 665 ft)
β	=	0.95 (typical, assumed)
α	=	0.85 (typical, assumed)
Cr	=	2.0 mg/l
FTE	=	1.79 lbs O_2 / BHP-hr

Power Requirements

$$\text{Power (aeration)} = \frac{7 \text{ lb/hr}}{1.79 \text{ lb/BHP-hr} \times 0.92}$$

$$= 4 \text{ HP}$$

A mixing level of approximately 20 HP/MG is recommended to provide complete oxygen dispersion and to maintain uniform concentration of biological solids in suspension.

$$\text{Power (mixing)} = 20 \text{ HP/MG} \times 1.09 \text{ MG}$$
$$= 22 \text{ HP}$$

Lagoon 2 - Partial Mix

Hydraulic Retention Time

HRT = 21.8 days @ the average daily flow

BOD Removal

Based on partial mix kinetics, the Eckenfelder Model calculates the following effluent characteristics from Lagoon 2:

	Summer	Winter
Soluble BOD (mg/l)	0.4	0.9

Refer to attached Lagoon 2 BOD removal calculations for details.

Mixing Requirement

A mixing level of approximately 8 HP/MG is recommended to provide partial mix conditions.

Power (mixing)	=	8 HP/MG x 1.09 MG
	=	9 HP

Recommendation:

Lagoon 1: Recommend 1 x 7.5 HP Aqua-Jet aerator and 5 x 3 HP Aqua-Jet aerators, with all aerators equipped with anti-erosion assemblies. The 7.5 HP aerator should be located nearest to the lagoon influent.

Lagoon 2: Recommend 1 x 7.5 HP Aqua-Jet aerator and 1 x 3 HP Aqua-Jet aerators with both aerators equipped with anti-erosion assemblies. The 7.5 HP aerator should be located nearest to the lagoon influent.

TAJ

Lagoon 1: MLVSS vs BODr in Complete Mix Aerated Lagoon

Stoney Creek WWTP, Stoney Creek, VA

$$Xv = \frac{a\,(So - Se)}{1 + b * t} \qquad Se = \frac{So}{1 + (k * Xv * t)}$$

where:

Xv = MLVSS Concentration (mg/l)

a = Sludge Synthesis Coefficient
= 0.73 (typical, assumed)

b = Sludge Auto-Oxidation Coefficient
= 0.075 (typical, assumed)

So = Influent Total BOD_5 (mg/l)
= 200 mg/l

Se = Effluent Soluble BOD_5 (mg/l)

k = BOD Removal Rate Coefficient (l/mg-day)
= 0.03 (assumed, summer)
= 0.02 (assumed, winter)

t = Hydraulic Retention Time of Cell 1 (days)
= 21.8 days

Based on complete mix kinetics, the Eckenfelder Model calculates the following effluent characteristics:

	Summer	Winter
Xv (mg/l)	54	53
Soluble BOD	6	8

Lagoon 2: Effluent BOD5 (Se) in Partially Mixed Aerated Lagoon

Stoney Creek WWTP, Stoney Creek, VA

$$Se = \frac{So}{(1 + (k * Xv * t))^n}$$

where:

So = Influent Soluble BOD_5 (mg/l)
= 6 mg/l (summer)
= 8 mg/l (winter)

Se = Effluent Soluble BOD_5 (mg/l)

n = Number of equally sized partially mixed cells in series
= 1

k = BOD Removal Rate Coefficient (l/mg-day)
= 0.03 (assumed, summer)
= 0.02 (assumed, winter)

Xv = Average MLVSS Concentration in Cell (mg/l)
= 20 mg/l (under partial mix conditions, assumed)

t = Hydraulic Retention Time (days)
= 21.8 days per cell

Based on partial mix kinetics, the Eckenfelder Model calculates the following effluent characteristics:

	Summer	Winter
Soluble BOD	0.4	0.9

PUBLIC NOTICE BILLING INFORMATION

I hereby authorize the Department of Environmental Quality to have the cost of publishing a public notice billed to the Agent/Department shown below. The public notice will be published once a week for two consecutive weeks in THE SUSSEX SURRY DISPATCH in accordance with 9 VAC 25-31-290.C.2.

Agent/Department to be billed: Accounts Receivable

Owner: Sussex Service Authority

Agent/Department Address: 4385 Beef Steak Road

Waverly, Virginia 23890

Agent's Telephone No.: (804)834-8930

Printed Name: Michael P. Kearns

Authorizing Agent – Signature: Michael P. Kearns

Date: August 6, 2015

VPDES Permit No. VA0061310
Facility Name: Stony Creek WWTF